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The Longitudinal, Differential Impact of a Small, Christian-Oriented Liberal Arts College on the Dogmatism and Values of Its Students

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THE LONGITUDINAL, DIFFERENTIAL IMPACT
OF A SMALL, CHRISTIAN-ORIENTED LIBERAL ARTS COLLEGE
ON THE DOGMATISM AND VALUES OF ITS STUDENTS

By

William E. Lindberg



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ABSTRACT

THE LONGITUDINAL, DIFFERENTIAL IMPACT OF A SMALL, CHRISTIAN-ORIENTED LIBERAL ARTS COLLEGE ON THE DOGMATISM AND VALUES OF ITS STUDENTS

By
William E. Lindberg

The Purpose

The purpose of this dissertation was to study the longitudinal impact of a small, Christian-oriented liberal arts college on the dogmatism, values, attitudes, and behavior of its graduates. The major focus was on the change and/or lack of change which took place within the first two years following the college experience.

One specific goal was to analyze the adjustments which took place on the open-minded/closed-minded continuum of the Rokeach Dogmatism Scale-Form E. The scores and change factors were compared between the college years and the postgraduate years. A second specific goal was to distinguish the post-college changes in values, attitudes, and self-reported behavior from a retest of the 1969 Wheaton College Senior Questionnaire.

Research Sample

The Alumni Revised Senior Questionnaire was sent to 150 randomly selected new alumni from the 1969 graduating class. One hundred and thirty usable questionnaires were returned for a sample recovery of 87 per cent. The usable data from the original 1969 Senior Questionnaire contained 108 completed instruments. The same number of completed student questionnaires was necessary from the alumni form in order to use the Chi Square Test. Therefore, a table of random numbers was used to select out twenty-two additional instruments from the alumni return total of 130.

The data to study graduate patterns on the open-minded/closed-minded continuum were collected by a retest of the Rokeach Dogmatism Scale-Form E. One hundred and five alumni from the 1969 graduating class were identified as a representative sample. The Dogmatism Scale retest had a 91 per cent sample return.

Findings

The researcher performed the "t" test on the group means of 143 freshman and repeated senior dogmatism scores to provide some base line comparison for any postgraduate dogmatism score changes. The freshman dogmatism scores were obtained in 1965 and the repeated senior dogmatism scores were gathered in 1969 from the identical students. The men and women students became significantly more open-minded (at the .001 level of confidence) during their college experience.

However, the Wheaton College alumni did not significantly change in mean dogmatism scores between their senior year test and their alumni retest. The evidence illustrated how dogmatism change was more closely associated with the college-aged individual's developmental growth and unaffected by the pressures inherent within the postgraduate experience.

The research findings from the Alumni Revised Senior Questionnaire illustrated how the persistence and stability of attitude, value, and behavioral positions were maintained by Wheaton College alumni. The twenty accepted null hypotheses all demonstrated no significant differences between expected alumni responses and the actual, observed responses. The one rejected hypothesis was unique in that the significant response change was related to data which covered a six-year time sequence from pre- to post-college behavioral patterns. The consumption of alcohol changed from a limited pre-college pattern to a more noticeable post-college pattern. This pre- to post-college pattern change was significantly differentiated by the

Chi Square Test at the .001 level of confidence.

The graduates from Wheaton College continued to operate within an attitude, value, and behavior framework that was solidified by their senior year in college. The Wheaton students continued to maintain a life style that was considerably different from most college graduates. However, the persistence and stability factor associated with attitudes and values was very consistent with the graduates from many diverse educational settings.

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CHAPTER I

INTRODUCTION

Statement of the Problem

The Need

The compilation of collegiate research in Feldman and Newcomb's The Impact of College on Students produced evidence that change in attitudes and values had taken place during the college years. The specific change in the measurement of authoritarianism was particularly well researched.

Freshman and senior differences are strong and strikingly consistent from sample to sample. Nearly without exception, the studies show seniors to be less authoritarian, less dogmatic, less ethnocentric, and less prejudiced than freshmen. Also with very few exceptions, these differences are relatively large and are statistically significant. Further, these differences are evident in such diverse colleges and universities as the University of Santa Clara (a Jesuit university in California), Bennington College (a small liberal arts college for women on the East Coast), and Michigan State University (a large, state multiversity in the Midwest).¹

The depth and persistence of attitude and value change as produced by the college experience have not been adequately researched. The need for additional data on this problem was discussed in chapter two.

The changed attitudes and values held by students when they graduated from most colleges have tended to persist in direct relationship to the degree of support they have found for these new attitudes and values in their post-college environments. The majority of changes have persisted

¹Kenneth A. Feldman and Theodore M. Newcomb, The Impact of College on Students, Vol. 1 (San Francisco: Jossey-Boss, Inc., 1969), p. 31.

because few students came in contact with influences strong enough to cause some reconsiderations.

However, the small, Christian-oriented liberal arts college with its potential for a unique impact on the student's attitudes and values has graduates who were often faced with a society that has reconditioned the stability of these college-induced changes. Consequently, the framework of unique value change opportunities along with the particular problems in sustaining these changes has stimulated the need to provide research answers to the persistence of value change and the directional trends of dogmatism for graduates of the small, Christian-oriented college.

To deal responsibly with the restructuring of our apparatus of higher education in an era when universal education beyond high school is a thoroughly tenable vision, we must learn a good deal more about the sources and types of influence which that apparatus contains within itself, and we must think more deeply about the normative questions of whether those influences are legitimate and desirable in today's somewhat harrowing world. Simultaneously, we must also learn a good deal more about the vicissitudes of college-induced growth in students after they have taken their degrees and exposed themselves to other forms of press and demand in the wider environment.²

The Purpose

Wheaton College in Wheaton, Illinois, represents a cross section of conservative, evangelical Protestant churches in the United States. This subculture has emerged from a carefully protected fundamentalistic tradition. The students who attend Wheaton are asked to adhere to a rigid standard of behavioral norms and a prescribed set of values.

The purpose of this dissertation was to study the longitudinal impact of a small, Christian-oriented liberal arts college on the dogmatism,

²Edward J. Shoben, Jr., forward in Beyond High School: A Psychology Study of 10,000 High School Graduates, by James W. Trent and Leland L. Medsker (San Francisco: Jossey-Boss, Inc., 1968), p. xiv.

values, attitudes, and behavior of its graduates. The major focus was on the change and/or lack of change which took place within the first two years following the college experience.

One specific goal was to analyze the adjustments which took place on the open-minded/closed-minded continuum of the Rokeach Dogmatism Scale-Form E. The scores and change factors were compared between the college years and the postgraduate years. A second specific goal was to distinguish the post-college changes in values, attitudes, and self-reported behavior from a retest of the 1969 Wheaton College Senior Questionnaire.

The study has offered some research data concerning changes which took place after graduation from a well-structured, conservative life style and during the initial period of adjustment to the postgraduate demands of the large society. The research findings should have significant implications for the small, Christian-oriented colleges in evaluating the persistence of college-induced value change.

Major Hypotheses

As chapter two has indicated, there were very few longitudinal studies which have compared values, attitudes, behavior, and dogmatism so that the same students were tested as college students and retested as alumni. Studies on dogmatism were unavailable for alumni groups, and those studies on value change have not provided sufficient evidence to predict any definite conclusions. Consequently, the two major hypotheses were stated in the null form since the lack of consistent data prevented a clear directional prediction pattern.

Hypothesis I

There was no significant difference between the dogmatism scores of Wheaton College students who were tested as seniors and the dogmatism scores of the same students nineteen months after graduation.

Hypothesis II

There was no significant difference between the value, attitude, and behavioral responses of Wheaton College senior students and the responses of the same students nineteen months after graduation on the 1969 Wheaton College Senior Questionnaire.

Theoretical Background of Dogmatism

Historical Development

The research on right authoritarianism began in 1943 with the special concern over the problem of anti-Semitism. The problem, most clearly focused in Nazi Germany, soon became the concern of both the social scientist and the layman. In 1944 Levinson and Sanford attempted to study the ideological content of anti-Semitism so as to devise quantitative methods of measurement. In 1945 Frenkel-Brunswick and Sanford studied the personality characteristics associated with anti-Semitism. Their research raised the question of how general and/or specific was prejudice. Was it likely that the anti-Semitic individual would also express hostility toward other minority groups?

In the course of the investigation it became evident that this was indeed the case. Those who scored high on the anti-Semitism Scale also tended to score high on other scales measuring attitudes toward other minority groups. It was on the basis of such findings that the Berkeley investigation branched out from the study of anti-Semitism to the broader study of ethnocentrism. An ethnocentric

3

person is one who generally rejects and vilifies outgroups, and at the same time overly accepts and glorifies the ingroup.³

In 1950 the book The Authoritarian Personality by Adorno, Frenkel-Brunswick, Levinson, and Sanford appeared with a new instrument, the F Scale.

It was designed to be used as an indirect measure of prejudice without mentioning the names of any specific minority group; and it was designed to measure underlying personality predispositions toward a fascistic outlook on life.⁴

Those who scored high on the F, or Fascism Scale, scored high on measures of anti-Semitism, anti-Negro feelings, ethnocentrism, and political conservatism.

The findings of this research were tempered by the realization that many people demonstrated authoritarianism, intolerance, and ethnocentrism without adhering to the specific ideological framework of the right authoritarianism position. This insight led to the proposal by Professor E. A. Shils in the middle 1950's for a study of left authoritarianism. Dr. Milton Rokeach questioned the necessity of placing authoritarianism within a political framework that had right and left definitions. He proposed that "We should pursue a more theoretical ahistorical analysis of the properties held in common by all forms of authoritarianism regardless of specific ideological, theological, philosophic or scientific content."⁵ His main concern was to make a distinction between the structure of the ideological system and the content. He set out to differentiate the formal, structural properties of belief system from any specific content. He was more interested in how a person believed than in what he believed. It was Rokeach's goal to define the open-minded/closed-minded properties irregardless of individual positions within a political

³Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), p. 12.

⁴Ibid., p. 12

⁵Ibid., p. 14.

framework. The Rokeach Dogmatism Scale was the instrumentation that resulted from this effort to understand the unique degree to which a person would have held to his particular belief, attitude, or political position. It provided a systematic basis for theory building which transcended specific content.

Rokeach's Frame of Reference

Rokeach gave the following frame of reference when he distinguished between the open and closed systems of beliefs.

The more open one's belief system, the more should evaluating and acting on information proceed independently on its own merits, in accord with the inner structural requirements of the situation. Also, the more open the belief system, the more should the person be governed in his actions by internal self-actualizing forces and the less by irrational inner forces.⁶

Consequently, the open-minded person should have more capacity to resist the external pressures that tend to restrict the decision making process. The open-minded person should possess sufficient strength to resist most rewards and punishments handed out by parents, peers, reference groups, and social, institutional, and cultural norms. These forces should be less effective on the open-minded person as determinants toward processing and evaluating informational data.

Conversely, the more closed the belief system, the more difficult should it be to distinguish between information received about the world and information received about the source. What the external source says is true about the world should become all mixed up with what the external source wants us to believe is true, and wants us to do about it. To the extent that a person cannot distinguish the two kinds of information received from the source, he should not be free to receive, evaluate and act on information in terms of inner

⁶Ibid., p. 58.

requiredness. He should be exposed to pressures, rewards and punishments, meted out by the source designed to make him evaluate and act on the information in the way the source wants him to.⁷

Rokeach presented this framework which summarized information as having a dual character when it was received by an individual. Information received had merit in itself only when it was clearly distinguishable from the originating source. Rokeach concluded that correct evaluation of information had necessitated the separation of content from the source of that content. The ability to make distinctions between the duality of information was the basic factor in evaluating a person's belief system as being open or closed. The more open the individual's belief system, the more likely he would have responded with discernment to the merits of each communication. The more closed the belief system, the less cognitive discrimination would have taken place between the information and the source of that information. "Reliance on authority, yielding, conformance, and resistance to acculturation all may have a common cognitive basis, namely the ability or inability to discriminate substantive information from information about the source, and to assess the two separately."⁸

Rokeach assumed that all belief systems were a conflicting set of motives. The disagreement existed between the cognitive need to know and the protective need to ward off all forms of threat. When the need to understand knowledge predominated, the individual was operating on the basis of an open belief system. When the need to protect against threat predominated, the individual was operating on the basis of a closed belief system.

Dr. Milton Rokeach designed the Dogmatism Scale in order to measure the individual differences between open-minded and close-minded belief

⁷Ibid., p. 58.

⁸Ibid., p. 63.

systems. The Dogmatism Scale was constructed as a measure of general authoritarianism and general intolerance. The forty item form E Dogmatism Scale was refined to more accurately evaluate the above described characteristics of open-mindedness and closed-mindedness.

Frame of Reference for Value Change

An attitude is an organization of several beliefs focused on a specific object or situation, predisposing one to respond in some preferential manner. Some of these beliefs about an object or situation concern matters of fact and others concern matters of evaluation. An attitude is thus a package of beliefs consisting of interconnected assertions to the effect that certain things about a specific object or situation are true or false, and other things about it are desirable or undesirable.⁹

Values, on the other hand, have to do with modes of conduct and end states of existence. To say that a person "has a value" is to say that he has an enduring belief that a specific mode of conduct or end-state of existence is personally and socially preferable to alternative modes of conduct or end-states of existence. Once a value is internalized it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and situations, for justifying one's own and other's actions and attitudes, for morally judging self and others, and for comparing self with others. Finally, a value is a standard employed to influence the values, attitudes, and actions of at least some others.¹⁰

The attitude and value definitions have illustrated the necessary differentiation between the two concepts. The use of immediate goals has provided an attitude structure by which a consistent interpretation towards the multiplicity of situations within the average person's daily existence can be achieved. The formulation of a value structure has stimulated the construction of a total, cohesive framework in which the individual can integrate his daily existence within the parameters of a desired life style. This value framework has provided the ultimate purpose and ultimate end goal to be achieved in life. "A value provides more than a concrete goal

⁹Milton Rokeach, Beliefs, Attitudes and Values (San Francisco: Jossey-Boss, Inc., 1968), p. 159.

¹⁰Ibid., p. 160

of action; it provides a criterion by which goals are chosen. It does not simply represent something that is preferred, but something the person feels ought to be preferred."¹¹ Values have helped to conceptualize the individual's assent to an ideal state of affairs. "A person may be said to entertain a value to the extent that he conceives a particular state of affairs as an ultimate end, an absolute good under all circumstances, and a universal 'ought' toward which all people should strive."¹²

It was the process by which responses are made to achieve an end goal that provided the attitudinal framework. This framework structured the method and means to reach a specific end goal. However, the value structure provided the rationale that determined which end goals should be achieved.

If beliefs, attitudes, values, and behavior were placed into a hierarchical structure, the following rank ordering would be achieved. Values would rank above attitudes, and beliefs would rank below attitudes. Each aspect of this three-tiered hierarchy would have played a significant role in the individual's behavior pattern. Consequently, the concepts described in this section must work together to fully maximize the functioning capacity of actual behavioral responses.

Finally, it was assumed that values had provided some justification for past behavior, and that values played a significant role in setting guidelines for future action. It additionally was assumed that values and behavior had sufficient convergence so that the individual developed some consistency between his behavior and his stated values. It was apparent

¹¹William A. Scott, Values and Organizations (New York: Rand McNally and Company, 1965), p. 4.

¹²Ibid., p. 15.

that there was a discrepancy between verbalized values and actual behavior. However, the individual's statements concerning his values and behavior were evaluated within the context of the instrumentation used in this research in order to speculate about the desired standards of conduct.

Scott concluded his collegiate research with the belief that "For the average student at the University of Colorado, there was evidently some tendency toward correspondence between value and overt behavior."¹³

This summary was from a study in which a random sample of the University of Colorado student body reported on twelve values that were being measured. "One can conclude with fair confidence that there is, on the average, some tendency for values and behavior (at least self-reported behavior) to correspond within the population of students represented here."¹⁴

Definition

The report of the Danforth Commission on church-sponsored higher education in the United States was compiled from questionnaires sent to 1,189 non-publicly controlled institutions. The replies to these questionnaires established the fact that 817 colleges and universities were identified as having relationships which were considered of sufficient significance that they should be designated as church-sponsored institutions.

In addition to this basic list of 817 church-related colleges and universities, we compiled a supplementary list of eighteen institutions that cannot be classified technically as church-related but do have a definite religious orientation. For example, Wheaton College, Illinois, although it is not connected with an individual church, describes itself as interdenominational, and its statement of purpose reflects a pervasive interest in religions.¹⁵

¹³Ibid., p. 36.

¹⁴Ibid., p. 38.

¹⁵D.M. Mackenzie and M.M. Pattillo, Church-Sponsored Higher Education in the United States (Washington, D.C.: American Council on Education), p. 19.

It seems that the relationship between institutions of higher education and religious organizations are much too complex to be adequately defined by a simple definition. The institutional history, church polity, financial arrangements, board compositions, ownership, educational aims, and faculty-student selection processes are so individualized that each institution needs to provide the appropriate vocabulary to adequately describe its unique church associate.

The use of the term "Christian-oriented college," selected to describe Wheaton College, was suggested by the Danforth Commission's definition: "Wheaton College is a religiously-oriented institution not related to particular religious bodies."¹⁶

Overview

In chapter two the college research in attitudes, values, and dogmatism were historically reviewed from 1936 to 1970. The attitude and value changes prior to the "Jacob Report" in 1957 were discussed within the context of the social and political framework of that day. The "Jacob Report" was focused upon in greater detail because of its stimulation for later research. College administrators were concerned with the summary of the "Jacob Report" which questioned the amount of value impact induced by the average college or university. The post "Jacob Report" research was acknowledged for its increased methodological sophistication.

The discussion of dogmatism centered on Rokeach's Dogmatism Scale-Form E. The research utilizing this instrument was reported in detail. The longitudinal as well as cross-sectional studies were analyzed to determine the degree of change on the open-minded and closed-minded continuum.

¹⁶Ibid.

In chapter two, the research on postgraduate persistence of college-stimulated change was evaluated. The alumni studies on value and attitude change were somewhat scarce, but an historical presentation was made available. However, similar alumni studies on dogmatism were non-existent.

In chapter three, the methodological design was discussed. The demography and characteristics of the college sample were explained. The research procedures used in the collection of data were analyzed. The host institution, Wheaton College, was described according to Hilberry and Keaton's study Struggle and Promise: A Future for Colleges.

In chapter three, the instrumentation used to collect the data was described. The history, reliability, and validity of the Rokeach Dogmatism Test-Form E was reviewed. The second instrument, the Wheaton College Senior Questionnaire, 1969, was presented with a rationale for its use in this research. The specific nature of the data collected from both instruments was explained. The response to both alumni samples and the method used in securing the data was reported.

The final part of chapter three provided the analysis of all reported assumptions. The explanation of the assumptions formed a framework for a better understanding of the theoretical background utilized by the researcher. The statistical hypotheses were specifically stated with a descriptive discussion on the level of statistical significance that was considered acceptable.

In chapter four, the actual data was presented from the statistical tabulation of the instruments used in the study. The results of the "t" test and the chi square statistical analysis were used to provide some significant interpretations of the original hypotheses. The discussion of the process attempted to draw some conclusions and final implications.

In chapter five, the research findings and analyzed implications were compared with the research of chapter two. This analysis was used to provide insight for future collegiate research. Finally, the limitations of this dissertation were discussed.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The major research on selected attitude and value changes for American college students has been reviewed. This historical review has necessitated an exploration into numerous research instruments that have interpreted how the student population has changed the sequence and amount of value adjustments for the years between 1936 and 1970.

Collegiate attitude and value research during the late 1930's and the 1940's has been presented in relationship to measuring instruments tied to the political, economic, and social issues of that time period. The 1943 Bennington College study by Dr. Theodore Newcomb was chosen as an illustration of such research that related to the issues of that day.

The "Jacob Report" of 1957 was selected for its comprehensive summary of earlier attitude and value research. Its far-reaching impact on higher education has warranted a more in-depth discussion. The conclusions of this study have helped to stimulate additional research which has attempted to justify the role of higher education on the development of student values.

The central focus of the post "Jacob Report" era was the research that analyzed student changes in dogmatism, authoritarianism, social maturity, and ethnocentrism. This section has been divided into two segments. The first segment discussed cross-sectional and longitudinal studies involving

Rokeach's Dogmatism Scale-Form E. This instrument was surveyed in order to analyze the changes that had occurred during the college years in relationship to open-mindedness. An example of the research included in this section was Plant's longitudinal study at San Jose State College. All the studies in this segment had additional instrumentation which overlapped the second section of this time period.

The second segment concentrated on authoritarianism, ethnocentrism, and scales from the Omnibus Personality Inventory. Trent and Medsker's survey of 10,000 high school graduates was used as an example of the research in this second segment of the post "Jacob Report" review.

The research on college alumni dogmatism and value change concludes this chapter. The historical approach again was used to span the major studies of post-college experience to determine the sustained impact of higher education on attitude and value development.

A review of the reported research was summarized, and from it was drawn conclusions which provided a framework for the future.

Collegiate Research 1936-1957

The history of collegiate research on selected attitudes and values was varied and complex. The instruments used to determine degrees of change were reflective of the cultural perspective of their day. The degree of expertise in research methodology conditioned the reliability and validity of the collected data. The 1920's and early 1930's provided research that made extensive use of the cross-sectional approach.

E. S. Jones's 1923 study on student opinion, Bain's questionnaire in the same year on religious attitudes, Thurstone and Chave's 1929

attitude measurement of the church, Droba's (1932-1933) studies on pacifism and attitudes toward Negroes, Katz and Allport's comprehensive study of student attitudes concerning the deity, Boldt and Stroud's 1931 research on the increase of liberality from freshman to graduate school years, and Symington's investigation on religious liberalism-conservatism were all hindered by the methodological limitation involved in cross-sectional comparisons of college classes. This criticism of the cross-sectional approach was given by Corey who felt that the selective mortality of students between the freshman and senior years had a significant impact on the interpretation of attitude change.

Corey felt that the attitude shifts reported in each of the above studies would have limited research impact because the actual attitude differences would have been masked by academic mortality. He questioned the assumption that the length of education could have been the prime consideration for attitude change when the selectivity of student persistence in higher education was not part of the research design.

The popularity of the method of measuring changes in student attitudes by administering attitude scales to individuals with different degrees of academic training lies, very likely, in its convenience. It is astonishingly easy to administer the attitude scales, and the general availability of college students of different classes makes this type of investigation very enticing. The only technique which will give valid data involves the repeated testing of the same students as well as repeated testing of other young people not in college. This is a time-consuming process calling for a four or five year program of testing. In the opinion of the writer, however, the questions that may be answered amply justify the labor as well as the necessity for delaying publication.¹

Corey's statements in 1936 reflected the lack of longitudinal attitude research for college populations. In 1938, Vernon Jones of

¹S. M. Corey, "Attitude Differences between College Classes: A Summary and Criticism," Journal of Educational Psychology, 27 (1936), 329.

Clark University reported his longitudinal findings on college student attitudes as they changed from freshman to senior year with the following observation.

In comparing the attitudes of our group with those in other colleges, we were not able to find any comparable data. No study like the present one, involving a follow up of the same students over a four year period in college, had been reported.

Dr. Jones did acknowledge one other study which had appeared after his research was published. This study was P. R. Farnsworth's research on attitudes toward war during the college years. The direction of Farnsworth's study compared with that reported by Jones. It was apparent that little research was available in the 1930's which tapped the longitudinal attitude changes of college students.²

Dr. Jones's research was a follow-up study on the changes which took place on a conservative-liberal continuum for college students. The attitudes sampled included those on war, race, religion, and the church. The measuring instruments were five attitude scales designed by Thurstone to cover the designated attitude areas.

The entire 1930 and 1931 freshman classes of a small New England liberal arts college for men were given the five attitude scales. Seventy-seven of the original 104 students were retested four years later. The results demonstrated a consistent trend toward the liberal end on the war, religion, and church scales. These changes were statistically significant, but the overall degree of change from freshman to senior year was relatively modest. The overall attitude change toward the Negro was in the

²Vernon Jones, "Attitudes of College Students and the Changes in Such Attitudes During Four Years of College," Journal of Educational Psychology, 29 (1938 A).

desired direction, but it was too small to be considered significant.

This consistent trend toward the liberal end of the scale in attitudes toward war, religion, and the church is perhaps the most important result. It indicates that four years of life in college has some consistent influence on certain attitudes which are not directly taught. That attitudes can be influenced by direct propaganda has been shown many times; but that changes toward liberalism in certain attitudes attend four years of normal life in college has not hitherto been demonstrated by following the same students over this period.³

Seth Arsenian undertook an investigation to study two aspects of student attitudes during the four year college experience. He analyzed the amount and direction of theoretical, economic, aesthetic, social, political, and religious attitude change as was measured by the Allport and Vernon Study of Values test. The second part of his research attempted to locate specific factors which related to student attitudinal changes toward religion.

The Study of Values test was administered to three successive freshman classes between 1938 and 1940. The college was a New England men's college that offered a preparation in recreation, health and physical education, social group work, and teaching. Seventy-six students who remained to graduate after spending all four years at the school were readministered the test.

Arsenian reported the major findings of his research as follows:

1. The philosophical orientation and professional objectives of a college expressed in terms of evaluative attitudes act as selective criteria in the admission and retention of students.
2. The value patterns of students change during four years of college experience. (Arsenian indicated that this change was statistically significant from the freshman to senior years.)
3. The direction of change of values is not necessarily in complete harmony with the estimated pattern of the contemporary American culture. It depends upon the nature and content of the

³Ibid., p. 21.

curriculum and the extra-curriculum provided in a particular environment or subculture.⁴

The social and religious roles were important factors in the philosophy of this particular college. Consequently, Arsenian emphasized how value change was directly influenced by the college's atmosphere and by the unique overview of the student's major area of study. The pattern of value emphasis was consistent with the student's academic program and its corresponding value structure. In other words, a differential pattern of values in the social science and/or physical education divisions was consistent with the different values recorded by the students in these respective divisions. Student development was patterned in general harmony with the values championed by a distinctive curricular and extra-curricular program.

Arsenian definitely believed that within a democracy, and with reasonable freedom for differential educational programs, and within a latitude of cultural norms, the development of distinctive value patterns among the graduates of different colleges was possible.

The use of the Allport-Vernon or the revised Allport-Vernon-Lindzey Study of Values instrument has been used extensively in the evaluation of value change among college students. The following six research projects were all longitudinal studies and they demonstrated some consistent change between the freshman year in college and later years.

Thompson	1947 to 1951	Macalester College
Huntley	1956 to 1961	Union College

⁴Seth Arsenian, "Changes in Evaluative Attitude," Journal of Applied Psychology, 27 (August, 1943), 347.

Heath	1961 to 1965	Haverford College
Burgemeister	1938 to 1940	Barnard College
Klingelhofer	1960 to 1962	Sacramento State College
Telford and Plant	1960 to 1962	Six California two-year colleges. ⁵

In each of the above studies, the freshman score was higher on the religious value scale and correspondingly lower on the aesthetic value scale when compared with their upperclassmen retest scores. The other four value scales were inconsistent in establishing any particular pattern. The upperclass student would be expected to show more individuality, and he would be classified as more self-sufficient. The freshman with the lower religious value score would demonstrate more trust in the unity, purpose, and reason for existence. As was suggested by Arsenian's research, these longitudinal studies have illustrated the expected changes that usually develop between the freshman year and later years in college.

One of the most important studies completed before the "Jacob Report" was the Newcomb Study at Bennington College. This college was established in 1932 with an experimental philosophy of education. By 1935, the school had reached its intended capacity of 250 women students. It attracted bright young people who came from upper-middle and upper class families. They generally lived in urban centers along the East Coast, and the parents could be categorized as conservative concerning the important social issues and the "New Deal" politics of that decade. The faculty was relatively young, and they were socially and politically more liberal than were the students.

⁵Kenneth A. Feldman and Theodore M. Newcomb, The Impact of College on Students, Vol. II (San Francisco: Jossey-Boss, Inc., 1969), p. 3.

It was within this setting that Dr. T. M. Newcomb conducted a longitudinal study from 1935 to 1939. The students had been exposed to a living situation which provided an intense community atmosphere, where unprecedented degrees of personal freedom and self responsibility were common, and where pressure was exerted to face and provide intelligent responses to the social issues of that day.

The major instrument used to study attitude change was the "Political and Economic Progressivism" questionnaire, more commonly called PEP. This instrument was designed to obtain attitudes toward public relief, labor unions, and other current social issues.

Dr. Newcomb wanted to analyze how student attitudes toward public affairs were modified while living within the unique, specific context of the Bennington College community. The PEP questionnaire studied the current public affairs issues in a form that permitted retesting of the students' attitude over a period of time. The PEP results were compared within the context of the community life style as experienced differentially by the various academic classes. The self perception of students, recognized personal status, community respect and prestige, interpersonal relationships, and friendship groups were all analyzed by class groupings in order to provide some concrete perspective on the actual attitude movement which took place over the four year college experience.

The major quantitative findings from the study were as follows:

It was found that Bennington students show a significant change in social attitudes, particularly those measured by the scale labeled Political and Economic Progressivism (P.E.P.), between freshman and senior years in college. In terms of the particular content of the scales used, the change may be described as being from more to less conservatism. The change is significant by the usually statistical tests, and is considerably greater than that found in other colleges comparable to Bennington in certain respects. Senior attitudes

tend to persist after leaving college, no change at all was observable on the part of those who spent as much as three or four years in college and who had been out of college only one or two years when answering the questionnaire.⁶

Attitude change was only slightly related to courses of study pursued in college . . . but, the important influences making for attitude change were clearly of a communitywide rather than of an academic major sort, and for a given individual could be predicted far better from information concerning community relationships than from the area of major work.⁷

Examples of this community influence on attitudes included the close relationship between attitude scores and communitywide prestige. The greater the respect for the student, the less conservative were his attitudes. Similarly, the study of friendship groupings revealed that students most often chosen as friends by sociometric tests were more likely to have less conservative attitudes. This evidence indicated that interpersonal relationships have played a role in connection with attitudinal development within respective community settings. It became apparent from Newcomb's research that community-centered concepts were significant in relationship to attitude change. Research findings suggested that every kind of American college during these years had student attitude changes. However, many kinds of evidence conspired to suggest that each campus had its own brand of conservatism of which freshmen have more and seniors have less.

The majority of studies continued to be cross-sectional in nature despite the impact of the longitudinal studies which have already been reviewed in this chapter. The Cornell Values Study became an important

⁶Theodore M. Newcomb, Personality and Social Change: Attitude Formation in the Student Community (New York: Holt, 1943), p. 146.

⁷Ibid., p. 148.

resource for the "Jacob Report." The Cornell Values Study randomly selected a cross-sectional sample from eleven colleges and universities. Cornell, California, Wesleyan, Texas, Harvard, Yale, North Carolina, Dartmouth, Wayne, Fisk, and Michigan were the institutions of higher education used in the survey. The research was conducted in 1952 with a total of 4,585 students.

The general conclusions of the study indicated that students highly prized their opportunity for educational advancement. They grew to internalize the predominant values of their institution in regards to the legitimacy of an academic education. The authors concluded that the students of the early 1950's were politically disinterested, apathetic, and conservative. They tolerated racial and religious minorities, and they accepted the general assumptions of a democratic government. In summary, the students were judged to be liberal on social issues but generally conservative on political and economic issues. The religious needs were evident by their overwhelming desire for a meaningful religious faith. However, this desire for a faith did not activate any practical expression of direct involvement in religious observances.

Another significant study was conducted just prior to the publication of the "Jacob Report." From 1952 to 1958, Dr. Newitt Sanford, who was coordinator of the Mary Conover Mellon Foundation for the Advancement of Education, supervised the "Vassar Studies" which provided an in-depth survey of the contemporary college student.

Vassar, located in Poughkeepsie, New York, was in appearance and atmosphere a typical old Eastern women's liberal arts college. The student population was approximately 1400 with 58 per cent of all matriculating

students coming from private secondary education. The Middle Atlantic states and New England made up over 65 per cent of the student body. The largest number of students came from upper-middle and lower-upper class rankings. The majority of students were well prepared academically, and they exhibited high levels of ability.

The freshman classes of 1952, 1953, 1954, 1955, and 1956 along with the senior classes of 1953, 1954, 1955, and 1956 were administered a primary test battery which included 677 items from selected personality schedules. In addition to this schedule, the ethnocentrism scale, the authoritarianism scale, an adjective checklist, a drawing completion test, and some biographical data information was used.

The "Vassar Studies" indicated that freshman to senior attitudinal differences had taken place, thereby demonstrating a personality growth throughout the college years. The Developmental Status Scale and the Social Maturity Scale were used within the overall test battery, and both illustrated the major differences between the mean scores of freshmen and seniors. The Developmental Status Scale substantiated that seniors possessed more of the following qualities: freedom from compulsiveness, flexibility and tolerance for ambiguity, critical attitudes towards authority, mature interests, non-conformity, rejection of traditional feminine roles, and realism. The Social Maturity Scale, a measure of authoritarianism, was redesigned so as to be less ideological than the original F Scale, developed for the 1950 study on the authoritarian personality. Freshmen scored lower on this scale than seniors, indicating that freshmen were more rigid, more intolerant of ambiguity, possessed a more punitive morality, were more submissive to power, and exhibited a greater degree of cynical anti-intellectualism.

The above test results were supplemented by a program of individual student interviews. The purpose was to validate the results from the personality tests in order to more accurately assess the many attitude and value changes. A pilot study was conducted with the 1953 freshman class so as to work out an interview procedure. Starting with the entering class of 1954, a random sample of eighty freshmen were designated to be interviewed throughout their four years at Vassar.

Dr. Merwin Freedman, a member of the research team, collected and analyzed the information gathered on these interviews and came up with the following observations. He believed the prime concern for the majority of new freshmen was not academic problems but instead acceptance by the peer group. The academic fears were present, but they had not consumed the initial energy as had the original adjustment to the needs and demands of receiving approval and acceptance from fellow classmates. The interviews pointed out that the sophomore and junior years were evaluated as good adjustments, and they provided happiness within the college setting. These middle two years provided value growth and direction from an increasingly strong and supportive college atmosphere. However, the senior year was perceived as one of turmoil and upset. Many seniors saw graduation as a traumatic adjustment away from the emotional support of fellow students and into a society's environment that had different values and orientations.

Many seniors are in a situation of having thrown off traditional values without having fully established others of their own, of having loosened long standing inner controls at a time when new experiences have to be integrated, of having rejected old identities at the very time when important decisions have to be made.

We should not be surprised then, if they tend to be rebellious rather than autonomous, dominating rather than self-assured, cynical rather than realistic, hungry for sensations rather than able to enjoy them in a relaxed way.⁸

One might say that if we were interested in stability alone, we would do well to plan a program designed to keep freshmen as they are, rather than to try to increase their education, their maturity and their flexibility. . . . Seniors are more unstable because there is more to be stabilized, less certain of their identities because more possibilities are open to them. Processes making for differentiation and complexity have run somewhat ahead of processes making for equilibrium.⁹

Dr. Sanford's plea was for an educational system that understood the conditions of stress that are necessary for change. The need was to build a college system which promoted an environment in which stress would be activated but which also had some specific institutional ways of relieving this stress. In summary, he desired an educational system in which stress became mobilized in the best interests of the student's educational goals. He hoped for attitude and value development that was recognized as part of the total educational process.

The Jacob Report 1957

The well-known "Jacob Report" was published in 1957 in an attempt to summarize the development of research in values and attitudes. The original focus of the study was to determine the impact of the social science curriculum in relationship to the students' convictions, world view, and subsequent behavior patterns. The study was recognized as being too narrow in scope and consequently it was expanded.

⁸Merwin B. Freedman, "The Passage Through College," in Personality Development During the College Years, ed. by Newitt Sanford, Journal of Social Issues, XII, 4 (1956), 25.

⁹Newitt Sanford, "Personality Development During the College Years," Journal of Social Issues, XII, 4 (1956), 42.

The survey of data was enlarged to study the major patterns of American college students in order to determine what were the most common values and what were the most divergent values. The impact of the college experience was analyzed to isolate significant value change and its degree of permanence. The research team was interested in student values which changed the most and those values which remained the most stable. The determination to study the influence of different types of institutions on the development of student values was another specific part of the expanded scope of this "Jacob Report." The research team wanted to ascertain ways in which principles held by various colleges influenced the degree and direction of value change by their respective student populations.

The "Jacob Report" was developed by selecting thirty institutions which were representative of the size, location, administration, and objectives of American higher education. These schools were utilized to collect data on the special significance they had in affecting student value development. The Cornell Values study; the Cooperative Study of Evaluation in General Education by the American Council of Education; the Allport, Vernon, Lindzey Study of Values; a national survey of college graduates by Time magazine; and student essays were the main methods used in gathering the data.

The general impression from the summary of the various studies indicated that changes did take place during the college years. The students did become more uniform and less diverse in their expression of attitudes and opinions. They became more flexible as would be reflected by the decrease in dogmatism and by the less absolute description of standards and beliefs. The students demonstrated more capacity to think critically and they were less likely to express prejudice.

Dr. Jacob recognized the many attitude adjustments which seemingly had occurred during college. However, he questioned what basic values were actually altered.

When all is said and done, the value changes which seem to occur in college and set the college alumnus apart from others are not very great, at least for most students at most institutions.¹⁰

The observed value changes are mainly adjustments which reflect a response to the movement of society and the conformity to the student population. These changes are mainly on the surface of the personality and they do not affect the fundamental values which control the student's life style. . . . The weight of evidence indicates that actually very little change occurs during college in the essential standards by which students govern their lives. The values with which they arrive and which are integral elements of their personality, are still there when most students leave.¹¹

The students may modify their opinions, learn to tolerate people with different viewpoints, and become more self-reliant, but Jacob proclaimed that the vast majority of the student population fundamentally retained their same basic value judgments.

Jacob agreed that colleges have helped to solidify the student's intrinsic value structure and have given it more concrete perimeters. However, the report implied that fundamental value orientations had not changed and any liberalization of values had occurred so as to expedite the transition into the value structure of society.

The changes which do occur bring greater consistency into the value patterns of the students and fit these patterns to a well established standard of what a college graduate in American society is expected to believe and do. But the college student is not a frontrunner in a broad movement of values within the culture at large. If anything, the typical college graduate is a cultural rubber stamp for the social heritage as it stands rather than the instigator of new patterns of thought and new standards of conduct. College socializes, but does not really liberalize the students.¹²

¹⁰Philip Jacob, Changing Values in College (New York: Harper and Brothers, 1957), p. 50.

¹¹Ibid., p. 53.

¹²Ibid., p. 38.

Jacob perceived the college experience as a process that refined, polished, and worked into shape a set of values that could easily be fitted into the mainstream of the American life style. The main effect was to bring about general acceptance of standards and attitudes that were characteristic of college-bred men and women.

Jacob pointed out that senior students had a much greater consistency and homogeneity of values than they had as freshmen. The basic values had remained, but the extreme ideas had conformed more to the values of the masses. The central core of values remained intact for over 80 per cent of the students.

American college students today tend to think alike, feel alike, and believe alike. To an extraordinary degree, their values are the same wherever they may be studying and whatever the stage of their college careers. The great majority seem turned out of a common mold, so far as outlook on life and standards of conduct are concerned. This phenomenon, interpreted from one point of view, shows how limited has been the overall impact of higher education on the human character with which it has worked. Evidently college in general, or colleges in particular, do not break or alter the mold of values for most students.¹³

This last observation by Jacob was held irregardless of the location, administration, size, or background of the student body and the corresponding educational program.

Studies on Dogmatism: Post "Jacob Report"

The development of Dr. Milton Rokeach's Dogmatism Scale-Form E in 1960 stimulated new directions for many research projects. The dogmatism scale was included in many cross-sectional and longitudinal research efforts as one additional measurement in the developing inquiry into the educational impact of higher education on student attitudes and values.

¹³Ibid., p. 12.

The Santa Clara study was sponsored by a grant from the United States Department of Health, Education and Welfare. Stimulated by the "Jacob Report," a group of six professors from various disciplines decided to analyze the University of Santa Clara. It was assumed that:

. . . very little was known about institutions in which the imparting of particular values is a prime concern and a declared goal of the educational system. . . . The present study of what we called a "value oriented university" attempts to weigh the effectiveness of a direct effort to impart, both in the classroom and through socio-cultural forces operating on the campus, a clearcut system of moral and spiritual attitudes and values. We hope that as such, it will be found relevant to problems beyond those of the Roman Catholic system of higher education, of which this institution is a part.¹⁴

Santa Clara University was a small value-oriented school that was decidedly Catholic. In 1961, 94 per cent of the students gave their religion as Roman Catholic. Seventy per cent of these students had received their secondary education in Catholic high schools. Each student was required to take twenty-one units of philosophy and sixteen units of theology. These classes generally were taught by Jesuits, and the homogeneity of viewpoint centered around a Thomistic philosophy and the Catholic doctrinal position.

The researchers were aware that little data was available on Catholic colleges, and they wanted to evaluate the specific features of a Catholic education to see how this affected the graduates in the area of attitudes and values. They wanted to compare the differences and similarities between the impact of Catholic education and other secular colleges.

The entire male undergraduate population was tested in 1959 and the procedure was repeated in 1961. The purpose was to cross-sectionally

¹⁴J. Foster, R. Stanek, and W. Krossowski, The Impact of a Value Oriented University on Student Attitudes and Thinking (Santa Clara, Calif.: University of Santa Clara, 1961), p. 1.

compare the respective classes in order to determine what differing amounts of exposure to college had done to student value development. A longitudinal analysis of the data was provided when the 1959 freshman, sophomore, and junior classes were retested twenty months after the initial tests. The 1960 senior class and the entering freshman class of 1960 were retested eight months after their first test. The total population involved in the study included 1100 students.

The instruments used to study authoritarianism were Rokeach's Dogmatism Scale and the Gough revision of the California F Scale. The 1959 and 1961 cross-sectional studies indicated that dogmatism declined with each year in college. The differences between the freshman and sophomore years were significant at the .01 level for both years. The F Scale which was only used in 1961 showed a similar pattern. The freshmen were significantly different from the other three classes. The longitudinal results basically showed the same trends. "In summary then, it was found that authoritarianism declined significantly during the freshman year at Santa Clara and continued to decline gradually thereafter, although there was some evidence that by the senior year the trend was slightly reversed."¹⁵

The instrumentation for the measure of ethnocentrism was the California E Scale. The longitudinal and cross-sectional results were different, and this produced one of the few cases of inconsistent findings. The E Scale was used cross-sectionally in 1961, and the freshmen were significantly more ethnocentric than sophomores. The juniors continued the downward trend while the seniors had a minimal reversal of the trend.

¹⁵Julian Foster, "Some Effects of Jesuit Education: A Case Study," in The Shape of Catholic Higher Education, ed. by Robert Hassenger (Chicago: The University of Chicago Press, 1967), p. 18.

The longitudinal study on ethnocentrism was conducted with the entering freshmen of 1960. The retest at the end of the academic year showed an average increase that was not significant, but it did cause some puzzlement since it reversed the cross-sectional research. The one area that was considered as a possible increase, namely the Segregation Scale, had an overall decline. The expected lack of adjustment from freshman to sophomore year on the Segregation Scale was a reflection of the campus racial count which included no black faculty and only one black student.

The Political and Economic Conservatism (PEC) Scale from the post-war Berkeley research was slightly adapted by the Santa Clara researchers and used to measure conservatism. The longitudinal study for 1959 freshmen and sophomores who were retested as juniors and seniors in 1961 demonstrated significant declines in conservatism. The 1959 cross-sectional study indicated some slight declines in conservatism for each year of attendance at Santa Clara.

In concluding the Santa Clara Study, the students became more liberal in social and political outlook, they became less authoritarian and less dogmatic, and they decreased in ethnocentrism. However, these changes at a value-oriented university were predominantly in the first year, and they were relatively small changes. In comparison with other state universities, the changes were consistently within the range expected by any student regardless of the school attended. The researchers concluded with the assumption that it probably was correct to predict that most of the observed changes at Santa Clara could, to a more limited degree, be related to individual maturation.

Research was reported in 1962 and 1963 by Lehmann and Dressel at Michigan State University that was very similar to the Santa Clara Study.

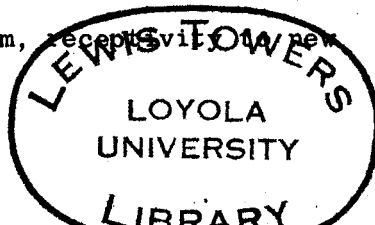
The two studies by Lehmann and Dressel were designed to analyze the socio-cultural, educational, and curricular differences in critical thinking ability, attitudes of stereotype and dogmatism, and traditional value orientation. The instrumentation included the Inventory of Beliefs, Form I, designed to measure stereotypic beliefs; Rokeach's Dogmatism Scale, Form E, designed to measure general authoritarianism; and Prince's Differential Values Inventory, designed to dichotomize traditional values from other values more oriented to the present time.

The tests were given in the fall of 1958 to 2,973 entering freshmen at Michigan State University. The students were retested after their freshman year and/or during their senior year depending upon the instrument.

The findings indicated that men and women seniors became less stereotypic in their beliefs from the freshman to senior years. The four year period had produced a student who was less rigid, less authoritarian, less prejudiced, and more flexible. The Dogmatism Scale specified that men and women seniors became more open-minded and as a result they were more receptive to new ideas.

The authors cautioned on the impact of the above changes when they noted that college attendance was not always accomplished by a significant change in attitudes and values. Hence, the amount of college education cannot always be used as a criterion to predict the degree of change in stereotypic beliefs, dogmatism, and traditional value orientations.

When the students who remained four years at Michigan State were compared with those who withdrew during their freshman, sophomore, or junior years, the researchers found there was no significant relationship between the amount of college education and changes in dogmatism, receptivity to new



ideas, or an attitude of open-mindedness. Even though all four groups of males and females became less dogmatic between 1958 and 1962, there was no one group that changed more markedly than another.

The relationship between the nature of attitude and value change with the college experience caused Lehmann and Dressel to conclude:

It is clear that significant changes in attitudes and values do occur during college years. This is true not only for students on this campus but for those attending other colleges and universities. However, we have been unable to single out of college experiences one factor to explain changes in attitudes and values. These changes may be a function of the person's maturity or personality, a function of the times we live in, the direct result of college experience, or a combination of one or more such factors. More intensive research in this area is needed to try to identify not only the factors that might be operating but also the processes by which these factors operate.¹⁶

The search for contributing factors in value change continued when Walter T. Plant designed a unique study to determine what changes in student ethnocentrism, authoritarianism, and dogmatism were associated with college attendance. He wanted to resolve the specific relationship between length of college matriculation and those changes. The most unique aspect of this research was the longitudinal comparison of college attendance with non-college attendance for college-aspiring young people in regards to the above attitude scales.

In the spring, summer, and fall of 1958, Plant administered the Opinion Questionnaire to 2,397 freshman applicants for the 1958 fall semester at San Jose State College. The questionnaire was part of the

¹⁶Irvin J. Lehmann and Paul J. Dressel, Changes in Critical Thinking Ability, Attitudes, and Values Associated with College Attendance, Final Report of Cooperative Research Project #1646 (East Lansing, Mich.: Michigan State University, 1963), p. 182.

pre-matriculation test battery given to all freshman students. Two thousand three hundred and fifty usable returns were realized from this initial testing.

The Opinion Questionnaire included 100 items divided between the California Ethnocentrism Scale, the Gough Revision of the F Scale, and the Rokeach Dogmatism Scale, Form E. Tests of the significance of the differences for correlated means were used in all the comparative analysis.

Plant collected data in retests in April 1960 and April 1962 for a two-year and a four-year longitudinal study on student attitude changes. He received 1,452 and 1,058 usable returns from each of the respective retests. The data was separated according to sex, time sequence, and length of college attendance. The researcher discovered that some subjects tested in 1958 had not attended any college during the four year period involved in this study. This non-college group became an unexpected comparison measure that proved to be most valuable.

Having groups of subjects differing in amount of educational attainment from 1958 to 1960 and from 1958 to 1962 made it possible for us to assert that this study was the only study (of which we were aware) that included control or, more accurately, comparison groups in the study design. This feature made it more possible to determine the impact or effect of the collegiate experience than has been possible from other designs used by other investigators.¹⁷

The 1958 to 1960 longitudinal study had the students divided into three educational attainment groups. These groups included: those enrolled for four semesters, those enrolled for one to three semesters, and those not enrolled in college. The results of the two-year study illustrated an overwhelming trend in which ethnocentrism, authoritarianism, and dogmatism

¹⁷W. T. Plant, "Longitudinal Changes in Intolerance and Authoritarianism for Subjects Differing in Amount of College Education over Four Years," Genetic Psychology Monographs, 72 (1965), 283.

scores declined for those who had originally applied to San Jose State College. Seventeen out of eighteen "t" tests conducted for male and female young people of varying lengths of education had reached an acceptable level of statistical significance when the 1958 and 1960 mean scores were compared.

In view of the fact that 17 out of 18, 1958 to 1960 comparisons of authoritarian and intolerance variables did reach acceptable levels of statistical significance and in view of the fact that all 18 comparisons yield results in the same direction of change over the two year period, we have tentatively called into question the notion of college impact or effect. Perhaps a better statement at this time would be that we have found evidence that necessitates a new interpretation of research results relating to certain nonintellectual changes underway in young adults who aspire to college attendance.¹⁸

The 1958 to 1960 study did demonstrate the factor of attitudinal change irregardless of the amount of college experience. However, it was noted that the degree of change was affected by the length of college attendance. There was a general tendency for student groups with the highest number of semesters completed to have the lowest mean scores on both the 1958 and the 1960 E, F, and D Scales. These same students also showed the greatest net decrease in mean scores between 1958 and 1960.

The four-year longitudinal study from 1958 to 1962 was very similar to the two-year study. The greater amount of college attendance necessitated a five group division. The groups included: students enrolled for seven or eight semesters, five or six semesters, three or four semesters, one or two semesters, and no semesters. The results from the four-year study indicated that significant differences in the E, F, and D Scales were obtained between the mean scores of 1958 and 1962. These statistically significant differences were obtained for young men and women at all levels

¹⁸Ibid., p. 270.

of educational attainment. The original applicants who did not attend college had the same trends as those students who attended for varying periods of time.

In light of the fact that 30 out of 30, 1958 to 1962 comparisons of authoritarian and intolerance variables (for groups of males and females differing in amount of higher education during the four year period) reach acceptable levels of statistical significance, and in view of the fact that all 30 comparisons yield results in the same direction of change over the four year period, we call into question the assertion of college impact on authoritarianism and intolerance. As was the case with the two year study, a defensible position seems to be one that asserts that the collegiate experience facilitates authoritarian and intolerance reduction: a charge that seems to be underway in young adults who aspire to college irrespective of whether or not they go to college.¹⁹

Plant compared the degree of change from 1958 to 1960 with the degree of change from 1960 to 1962. He used the same subjects in the study for the entire four-year period. The general conclusion was that the greater change in authoritarianism, ethnocentrism, and dogmatism took place during the first two years of college attendance.

The final study of dogmatism was performed when Mundelein College undertook a comprehensive institutional analysis in the summer of 1962. Data for the self-study was collected from student and alumnae questionnaires. A random sample of forty freshmen entering Mundelein in the fall of 1963 were given a modified form of the F Scale and Rokeach's Dogmatism Scale, Form E.²⁰

¹⁹Ibid., p. 2771

²⁰Robert Hassenger, "The Impact of a Value-Oriented College on the Religious Orientations of Students with Various Backgrounds, Traits, and College Exposures (unpublished Ph.D. dissertation, University of Chicago, 1965).

The students were retested in May 1964 at the end of their first college year. The authoritarian score of the F Scale decreased at a .001 level of statistical significance. The dogmatism score was quite a surprise in that the first year of college matriculation did not significantly affect this scale. The students did decrease their mean scores, but the decrease was much smaller than anticipated.

A second longitudinal retest of the same student sample took place in March 1965 near the end of the sophomore year. The authoritarian score continued its downward trend but at a slower rate of decline. However, the Dogmatism Scale was another surprise in that the second retest produced a statistically significant decline in the dogmatism score. The decline was significant at the .01 level. It is difficult to give an adequate explanation for this unusual pattern of dogmatism change.

Post "Jacob Report" Research Without Dogmatism

The College Attendance Study was conducted by Drs. Trent and Medsker at the Center for Research and Development in Higher Education at Berkeley. The study was started in 1959 with data collected from over 10,000 high school seniors. The longitudinal personal and vocational development of these high school graduates was followed for the next four years. The original subjects were retested in 1963 and nearly 50 per cent responded.

The two main comparison groups were those individuals who became employed immediately after high school and those who entered and persisted at college. One of the major questions posed by the research team was, "Did the sample of young adults who were exposed to college for four years

undergo greater personal development and change their values more than those who spent the time in the world of work?"²¹

The sample of students was drawn from sixteen multi-industrial cities that were located in California, Pennsylvania, and the Midwest. These communities were comparable in major demographic, ethnic, and industrial characteristics. The median population was slightly over 40,000 people.

The instrumentation included five attitude scales from the Omnibus Personality Inventory. The Social Maturity Scale and the Nonauthoritarianism Scale were the two attitude scales that measured the students' openness, objectivity, and flexibility in thinking and which were available for longitudinal comparison between 1959 and 1963. The results from these two scales indicated that men and women college students had highly significant and decidedly observable increases in their mean scores when compared with the high school graduate who was employed. There were statistically significant differences for the college students in the direction of their change while the same had not developed for the employed nonstudents. Additionally, the amount of change differential between the two groups was statistically significant.

The Social Maturity Scale and Nonauthoritarianism Scale scores were stratified according to academic ability and socioeconomic status

²¹James W. Trent and Leland L. Medsker, Beyond High School: A Psychological Study of 10,000 High School Graduates (San Francisco: Jossey-Boss, Inc., 1968), p. 30.

to determine what role they played in the changes. The results suggested that whatever the ability or background, the employed showed considerably less growth in the related attitude changes when compared against the college students. The difference in change scores for employed and college students was statistically significant beyond the .01 level at almost each ability and socioeconomic level.

The authors demonstrated that the college students who persisted in college had significantly greater change than did those college students who withdrew from college. In fact, it was noted that the Social Maturity change was greater between the college withdrawals and the college persisters than it was between the college students who withdrew and those individuals who did not attend college. This fact raised questions with some previous research which documented that the greatest change of college students' values took place during the freshman and sophomore years.

If persistence in college is related to personality development, then it may be argued that the longer the exposure to college the more change in attitudes and values is fostered or at least facilitated by the college. If change takes place early, then it may be argued that the eventual persisters are from the beginning more open to change than the eventual withdrawals. Related research does not clearly point to the greater validity of one interpretation over the other.²²

The conclusion of Trent and Medsker's insightful research should be summarized in these words:

What most distinguished the "experimental" group of college persisters from the "control" groups of withdrawals and especially nonattenders was the development of autonomy. Definitely there was a strong relationship between entrance to and length of stay in college and the growth of open-minded, flexible, and autonomous dispositions, as measured by two scales designed to assess these traits. The fact that the carefully classified college withdrawals were more like the nonattenders than the persisters in their amount of manifest change

²² Ibid., p. 154.

indicates that the type of personality development measured continues to be associated with persistence in college beyond the early years. This factor held regardless of the level of academic ability or socioeconomic status.²³

Another important study which analyzed the impact of the college experience on attitude and value change was the 1961-1965 Student Development Study. This research was conducted at Stanford University and at the University of California at Berkeley. Six scales from the Omnibus Personality Inventory, the Authoritarian F Scale, and the Ethnocentrism E Scale were administered to the entire Stanford freshman class of 1303 students and to 2014 entering freshmen from Berkeley, representing two-thirds of that class. Four years later, 60 per cent of the students who remained in both colleges were retested to observe their change.

The results recorded that the men and women students involved in this study had mean differences between their freshman and senior years on all eight attitude scales. This consistent pattern of change in a desirable direction was statistically significant on each measurement.

Four of these scales have enough in common to permit us to describe the changes as a composite. The SM, DS, F, and E (Social Maturity, Developmental Status, Authoritarianism, and Ethnocentrism) mean score changes all reflect a movement toward greater open-mindedness and tolerance, a rejection of a restricted view of life, and a humanization of conscience. The complexity of the world is more and more recognized, and there is less tendency to demand pat answers. Along with this, the stereotyped view of right and wrong gives way to a broader acceptance of human diversity.²⁴

The movement of the SM, DS, F, and E mean scores have reflected a movement toward greater open-mindedness, increased tolerance, and a humanization of conscience. The author indicated that the students' movement was in keeping with the general prevailing moral standards of our society.

²³Ibid., p. 176.

²⁴Harold A. Korn, "Personality Scale Changes from the Freshman to Senior Year," in No Time For Youth, by Joseph Katz and Associates (San Francisco: Jossey-Boss, Inc., 1968), p. 166.

Most of the changes described in this research could be interpreted as part of the students' socialization process. The effect of higher education had its greatest impact on the liberalization of student attitudes in those areas where society has already established a great amount of cultural approval.

It was necessary to raise the question about change resulting from socialization rather than personality development because this seems central to the study of the impact of the liberal arts college. While we were able to place our results in some perspective by introducing this issue, we are far from being able to draw any clear distinction between attitudes derived from long standing personality dispositions and attitudes reflecting a particular social climate. Although mean score changes are helpful to us in theorizing about the relative impact of socialization or development, this level of generality is useful only for clarifying certain conceptual problems.²⁵

From 1965 to 1969, Dr. Arthur Chickering, director of the Project on Student Development in Small Colleges, undertook a five year study among thirteen small colleges. The colleges ranged from very conservative, religious schools to those which were very liberal in their value orientation. The schools differed dramatically in objectives, rules, regulations, and expectations of educational philosophy and student behavior.

The purpose of the study was to discover the impact that different kinds of colleges had on their students during the undergraduate years. The specific areas of investigation were the study of institutional and student characteristics, attrition, and student development. The students who entered these thirteen schools in September 1965 were given a battery of tests, and they were retested at the end of their freshman, sophomore, and senior years.

The preliminary findings indicated that the areas of change, the

²⁵Ibid., p. 183.

directions of change, and the amounts of change were very similar at all these unique and completely different schools.

Autonomy, for instance, increased among "authoritarian" students at highly structured institutions with numerous regulations and close adult supervision. It also occurred among "anti-authoritarians" attending a college with little overt structure, few regulations, and minimal adult supervision. Even on measures where statistically significant change seldom occurred, similarity of direction was still highly consistent in the different colleges.²⁶

Dr. Chickering stated that in each of the colleges he found the change factors to be greatly related to the general cultural forces at work in society. The colleges had neither accelerated nor retarded the general student development.

The final research project given in this chapter has yet to be published. It was performed by McConnell, Clark, Heist, Trow, and Yonge. The Social Maturity Scale from the Omnibus Personality Inventory was given to a sample of freshman men and women at Antioch, Reed, Swarthmore, San Francisco State, University of California at Berkeley, University of the Pacific, St. Olaf, and the University of Portland. Longitudinal studies were conducted between 1958 and 1963 at all eight schools. The uniformity of the results at these various schools provided some significant conclusions to the question of attitude change during the college years. At each institution, the men and women seniors were more socially mature and less authoritarian than they were as freshman students.

Studies on College Alumni

Dr. Merwin Freedman stated that most empirical studies of college graduates centered on various sociological factors such as income, age of marriage, number of children, occupation, and so on. It was somewhat rare

²⁶Arthur W. Chickering, "The Best Colleges Have the Least Effect," Saturday Review, January 16, 1971, p. 50.

to find alumni research that utilized the same students in a retest design that systematically attempted to see what lasting impact college has had on attitudes, values, behavior, and personal development.

What is needed is a sufficient amount of empirical information to enable us to place the experiences of the college years within a larger theoretical or systematic framework. We need to know which of the changes that take place are relatively transient and which become relatively enduring parts of the character or the personality. Do the changes measured by questionnaires, tests, or interviews, reflect only relatively isolated areas of verbal functioning, or do they influence large and important life patterns? Do the experiences or characteristics of alumni seem continuous or relatively discontinuous with the college years? Is it appropriate to think of the college years as a phase or period of individual development that comes to an end with graduation? Or does it appear that at least for some time after graduation the same sorts of progressions or regularities of development which characterize the college years are manifest?²⁷

Neither educators nor the public at large would justify the college experience in terms of the college years alone. College is supposed to do something to students, and that something refers primarily to consequences that make a difference in later years. There is therefore a very special irony in the fact that few studies of post college persistence of such effects, especially those justifying confidence conclusions, have been reported.²⁸

Alumni Studies on Dogmatism

College alumni studies on dogmatism have been non-existent. The writer was unaware of any longitudinal, retest design on Rokeach's Dogmatism Scale which had been reported for college graduates. It was evident that most research on dogmatism suggested that the shift to open-mindedness was on a descending curve from the freshman to senior years in college. The junior and senior students demonstrated much less significant change after their initial change in the freshman and sophomore years had

²⁷Merwin B. Freedman, "Studies of College Alumni," in The American College, ed. by N. Sanford (New York: John Wiley and Sons, Inc., 1962), p. 853.

²⁸Kenneth A. Feldman and Theodore M. Newcomb, The Impact of College on Students, Vol. I (San Francisco: Jossey-Boss, Inc., 1969), p. 308.

been dramatic and significant. Some researchers believed that the sophomore year was the conclusion to a period of attitudinal development. Most evidence seemed to justify the conclusion that dogmatism would not change after college graduation. However, it was believed by this writer that some specific alumni research still was needed to more accurately document the general assumptions and expected findings.

Value and Attitude Change Revisited

The studies which follow were devoted to an historical review of selected alumni research on the persistence and stability of attitude and value positions from the college years to later life.

The first alumni study reported in this section was conducted by Bugelski and Lester. They used the Opinion Test which gave twenty-five statements on national and social optimism, labor problems, economic status, discipline, social life, and religion. The instrument was designed to produce agreement or disagreement to those questions in order to determine a liberal-conservative continuum.

Bugelski and Lester compared the 1931, 1933, and 1934 freshman Opinion Test scores at a selected college with the retest senior scores of the identical students. The entire student population was retested two and three years after graduation.

The growth of liberality in attitudes from the freshman to senior years was revealed by the average score changes on the Opinion Test instrument. It was noticed that for each year there was a highly significant change from a conservative average to a more liberal one. The differences between the freshman and senior averages were reliable in each instance, well exceeding the statistical requirement for reliability.

When the average freshman endorsements for each statement were compared with the endorsements of the same individuals as seniors, the outstanding result showed that women students changed from a conservative position to a more liberal one on twenty-two of the twenty-five statements.

The alumni retest of these students demonstrated a mixed response with limited movement in both the liberal and conservative directions. However, none of the attitude shifts were large enough to be statistically significant and the authors came to the general conclusion that a large share of these college graduates tended to maintain their acquired liberal attitudes up to three years after graduation.²⁹

In 1936, another study was originated to measure the conservative-liberal attitudes among students in the areas of social-economic and political opinions. The Lentz C-R Opinionnaire, Form K, was the instrument used in this project. It had a range of sixty points with thirty as mid-point on the conservative-liberal continuum. The higher scores indicated conservatism.

The questionnaire was given to 3,758 students who attended eighteen colleges and universities. The schools represented four state universities, six Lutheran colleges, and six other denominational colleges.

In 1950, fourteen years after the college experience, these same students were given a retest to determine their level of attitudinal persistence. Sixteen of the original eighteen schools cooperated and 901

²⁹R. Bugelski and O. P. Lester, "Changes in Attitude in a Group of College Students During Their College Course and After Graduation," Journal of Social Psychology, 12 (1940), p. 324.

graduates returned the questionnaire. The responding sample was judged to be representative of the entire original population.

The results from the retest provided two major conclusions. There was a slight post-college trend toward more liberal attitudes. The 1936 mean was 32.30 and the 1950 mean was 30.48. This difference was significant at the .001 level, but the actual decrease was small. Fifty-one per cent of the retest alumni group shifted toward more liberal attitudes while 31 per cent shifted in a conservative direction. The second and more major conclusion was the evidence that student attitudes had persisted after fourteen postgraduate years. Nelson categorically stated that attitudes had been maintained after graduation, and he gave the following evidence for his position.

1. Of the 901 subjects, 18% did not change their attitude position by so much as three scale points on the 60 point scale between test and retest.
2. Although the differences in means between 1936 and 1950 were significant, they were relatively small and indicate persistence.
3. The marked institutional differences in attitude scores of 1936 tended to persist among the exstudents of 1950. (In other words, the 1936 attitude differences between the types of colleges continued to maintain their respective relationship in 1950.)
4. A correlation of .57 between the test in 1936 and the 1950 post college test is further indication of the relationship between attitudes in college and those held more than a decade later.³⁰

In 1939, Bender started an intense motivation study on 124 Dartmouth college seniors. They were a representative sample of the senior class. They were asked to complete various tests, ratings, interviews, and autobiographies. Fifteen years after the original study, Bender performed a follow-up study. The 1931 version of the Allport-Vernon Study of Values was used in both the original 1939 study and in the 1956 restudy.

³⁰Erland N. P. Nelson, "Persistence of Attitudes of College Students, 14 Years Later," Psychological Monographs: General and Applied, Vol. 68, No. 2 (1954), p. 8.

The major result was higher religious scores being recorded by 80 per cent of the alumni retest group. This finding called into question the factors which directly influenced such a dramatic change for the alumni group. Bender attempted to answer this question by giving the same form of the Study of Values Test to sixty-six 1956 Dartmouth seniors. When the current undergraduate test scores were compared with the original 1940 undergraduate scores, the present undergraduates had a reliably higher religious mean score. However, the comparison of the retested 1940 alumni group with the current 1956 senior students revealed a remarkably similar level of value scores. "These data would suggest that the temper of the times in which we live influences the religious value more than does the maturity of the men. Apparently, the same need for religious interests exists now among the young as among the older."³¹

The societal trend for increased religious values jointly influenced the alumni group and the current student population when they were both tested during the same time period. The longitudinal difference between the original 1940 student group and the alumni group was perceived by Bender as having a direct relationship to some national shift in religious values. The alumni group was responsive to the national climate in expression of religious needs. However, the impact from some national trend would affect all people in similar ways and consequently the alumni in the study would have maintained the same relative attitude position that was held in college.

The Mellon Foundation is a research venture into the mysteries of personality development during the college years. Attention has been centered on current studies, but studies on alumnae have occupied

³¹Irving E. Bender, "Changes in Religious Interest: A Retest After 15 Years," Journal of Abnormal and Social Psychology, 57 (July 1958), p. 45.

a prominent place in the scheme of things. Alumnae groups have been studied by a variety of methods.³²

As part of the general research at Vassar College, the opinions and attitudes of Vassar alumnae were studied as far back as the class of 1904. The Mellon Foundation included eighty-five graduates from the 1904 class, forty-three members of the 1914 class, seventy-three members of the 1921-1924 classes, fifty members of the 1929-1935 classes, seventy-seven members of the 1940-1943 classes, and 200 members of the 1956 class in a research project. The data was collected by mailed questionnaires and by personal interviews at alumni gatherings.

The instrument used was the California Public Opinion Survey which included the F and E scales. The results from the F scale showed the class of 1904 with the highest mean score (121.14) and the classes 1929-1935 and 1940-1943 tied for the lowest mean (87.99 and 87.56 respectively). The results of the E scale showed similar patterns. The class of 1904 had the highest mean (64.30), while the 1940-1943 classes had the lowest mean (41.70).

Dr. Merwin Freedman who was one of the principal researchers discounted age differentiation as being a causative factor in the score patterns. It was his belief that the change which took place in college was generally sustained after graduation. The decisive, irregular pattern that was exhibited by the various decades of alumnae were reflections of national and international events which happened during college years and consequently they influenced the attitudes that continued to persist years after the college experience. Freedman maintained that a differential study of individual test items had produced the conclusion that the tenor

³² Merwin B. Freedman, "Changes in Six Decades of Some Attitudes and Values Held by Educated Women," Journal of Social Issues, 17 (1961), 20.

of the time when the students were in college greatly related to the attitudes that were expressed as alumni. The classes of 1940-1943 with the lowest ethnocentrism score reflected the attitudes which prevailed during the Second World War.

In short, I consider experiences of the college years to be a major source of the variations in attitudes by decades which we observe. Increasing liberalizations of social outlook in American culture during the years of this century has in general been reflected in comparable changes on college students . . . and these changes have apparently persisted after college.³³

The factor of attitude change persistence was again demonstrated by the 1955 and 1956 Vassar classes. The students had made significant changes on the E and F Scales during their four year college career. In 1959, four and three years after graduation, the respective classes were retested on the same E and F Scales. The findings showed little change, and the conclusion was stated that alumnae of Vassar College were adhering very closely to the views they had expressed as seniors.

Dr. T. M. Newcomb along with three former students restudied the original Bennington College research. The purpose for the restudy was to analyze the persistence factor in college attitude change. The authors wanted to evaluate the many remarkable changes that had occurred during the original study. They wanted to determine what had been the actual fate of many new attitudes and values that developed between 1935 and 1939.

Such was our reasoning as we planned the following investigation. We could, at the very least, satisfy our own and many others' curiosity as to the persistence of rather remarkable individual changes incurred many years ago in a special historical and institutional setting. We could study the durability³⁴ of that institution's effectiveness in facilitating such changes.

³³Ibid., p. 24

³⁴T. M. Newcomb, et al., Persistence and Change: Bennington College and Its Students after Twenty-five Years (New York: Wiley, 1967), p. 9.

The restudy of the 1938, 1939, and 1940 Bennington College graduates was conducted in 1960-1961 some twenty to twenty-three years later. Four-hundred-six women out of 525 who had participated in the original study were available for the follow up study. Selected graduates were interviewed concerning political, social, and economic attitudes.

The original Political Economic Progressivism (PEP) scale was correlated with the 1960 Index of Political Conservatism. The correlation coefficient was .47.

The chi square analysis and the product-moment correlation of .47 indicate that, with few marked exceptions, the respondents who were relatively conservative when they left college are relatively conservative today, and those who were nonconservative are still non-conservative. In general, political attitudes developed or maintained in college by these women persisted over the period between graduation and 1960 without major change.³⁵

The product-moment correlation between original senior PEP scores and the 1960 Index of Favorability to Conservative figures was .42. The women who were conservative when they graduated were significantly more favorable to such national figures as Taft, McCarthy, Eisenhower, Nixon, and MacArthur than were the students who had been non-consistent at graduation. The reverse correlation of -.45 was found between final PEP scores and the Index of Favorability to Non-conservative figures. Women who were non-conservative at graduation were much more likely to be favorable to Roosevelt, Truman, Reuther, and Stevenson in 1960 than were their conservative classmates.

Newcomb analyzed the major changers from conservative to non-conservative positions to see if these students would have some regression in attitudes when they left the college atmosphere. He wondered if major changers would sustain their new positions when they were in a post-college

³⁵Ibid., p. 27.

atmosphere that neutralized the strong Bennington pull toward liberal attitudes. Newcomb discovered that women who became less conservative while in college were significantly less conservative in 1960 than were the students who had remained conservative in college. The women students at Bennington College who became less conservative during college showed no appreciable tendency to become more conservative once they had graduated.

The summary of the 1960 alumnae restudy was given as follows:

Those women who were relatively conservative in college tended to be relatively conservative in 1960-61, as measured by their attitudes toward issues, their voting preferences, their opinions of public figures, and their party identifications. Similarly, those women who were relatively nonconservative when they graduated were relatively nonconservative in 1960-61. Whether or not they had changed their political attitudes while in college, the point of view which characterized them as seniors fairly accurately characterized them in 1960-61. Thus changes that had taken place in college tended to persist for the next twenty odd years.³⁶

Discussion of Previous Research

Philip Jacob, a political scientist, produced a report filled with numerous methodological problems. The strongest indictment against the "Jacob Report" was the oversimplification in attempting to make a general, conclusive synthesis from such diverse data.

Many of the studies reviewed by Jacob were atypical in the sense that the investigator usually employed a single measure and/or only studied changes occurring during a one year period. In addition, as Riesmann commented, findings for females were often discussed as if they were applicable to males and vice versa. In view of the marked sex differences in attitudes and values, Jacob's pooling of the data makes the results misleading.³⁷

³⁶Ibid., p. 39.

³⁷Irvin J. Lehmann, "American College Students and the Socialization Process," in The College Student, ed. by W. B. Brookower (New York: Center for Applied Research in Education, 1965), p. 75.

Jacob made the additional mistake of attempting to assimilate uncorrelated studies. He compared studies conducted in the 1920's with the more sophisticated research of the 1950's. Standardized tests were matched with unreliable original questionnaires. The simple paper and pencil tests generally administered in an introductory psychology class were accepted and analyzed with the same importance as were the results from complex clinical instruments.

The most serious error was the undifferentiated data from which generalizations were drawn that were unrelated to the process involved in obtaining the information. It was evident that Jacob gave too much weight to small insignificant studies and insufficient weight to such notable studies as Newcomb's research at Bennington College and the "Vassar Studies."

Despite the shortcomings of the "Jacob Report," however, recognition must be given for the significant increase in research related to student values that was stimulated by this publication. It became evident that the methodological errors could not discount the necessity to ascertain if colleges and universities were meeting the developmental needs of their students. The increased research in college-induced values was a credit to this report. The severity of the conclusions was a direct impetus in the search to analyze old assumptions that were held by the college community.

The impact of college on attitude and value development has been illustrated in the historical review of this chapter. One general conclusion would be that freshman to senior changes have occurred with consistent uniformity between 1936 and 1970. The early studies concentrated on political and social attitude changes between the freshman and senior

years while the later research demonstrated the predominant changes that transpired in authoritarianism, dogmatism, ethnocentrism, intolerance, and social maturity.

Statistically significant changes have taken place in most attitude and value areas reported in this review. However, the literature has failed to provide conclusive evidence that the impact of college attendance has been correctly evaluated. Additional research must be conducted in order to provide the necessary insight.

The contrast between Plant's and Trent and Medsker's findings were a good illustration of the need for additional clarification. Plant suggested that college served to facilitate student value change at an accelerated pace beyond the normal maturation pattern of the noncollege attending young person. However, the direction and type of change did not significantly differ between the college attending and the noncollege attending individual. Student value change took place in all young adults who aspired to college irrespective of actual college attendance.

Plant emphasized that the greatest value change among college students took place during the first two years of attendance. Trent and Medsker's research has challenged Plant's conclusions by suggesting that persistence in college was directly related to the amount and type of attitude change. They summarized that noncollege individuals were less likely to change in the anticipated directions. In comparing the change pattern of the noncollege attender, the Nonauthoritarianism Scale indicated that the nonattender was less open-minded and less flexible in his thinking processes after four years of post high school employment than he was as a high school senior.

The findings from these two studies have demonstrated the need for additional research addressing itself to the impact of persistent college attendance and/or noncollege attendance on the individual's personal growth and development.

A second overall conclusion from the literature was that attitudes developed in college continued to persist after graduation. The college-experienced changes in political, social, economic, and religious attitudes were generally in the liberal direction. Bugelski and Lester, Nelson, Bender and Newcomb presented studies which showed the persistence of these new liberal attitudes after graduation. There was no instance in which the new mean scores of these new attitudes were reversed in a statistically significant manner.

The historical review of college alumni research demonstrated that inadequate attention had been given to the persistence of college-obtained attitudes. The above mentioned studies represented most of the major research efforts. Despite the "Vassar Alumni Studies" which attempted to determine postgraduate changes in personality characteristics, the entire area of dogmatism, prejudice, tolerance, authoritarianism, and social maturity has been neglected in alumni research. It was obvious that much remains to be added to this area of collegiate research.

Finally, this question forces itself upon us: Are colleges' long-range impacts limited to determining the level at which young people's attitudes are frozen on leaving college? There is, of course, another possibility: namely, the fostering of a general attitude of learning to adapt to the new. That kind of learning would result not merely in persistence but--at least optimally--in continued growth. We have no decisive evidence as to how frequently this occurs, but our best guess is that if the pattern is begun in college it is most likely to continue.³⁸

³⁸Feldman and Newcomb, The Impact of College, p. 324.

The development of openness to new information while in college should result in the quality of being open to additional change when the circumstances warrant it. This framework of attitudinal change should greatly enhance the maximum capacity of each individual student so that the prime goals of higher education can be achieved. New research must provide the guidelines in which these objectives can become a reality.

Summary

The collegiate research between 1936 and 1957 was reviewed in the first section of the chapter. Dr. Vernon Jones conducted a longitudinal study which analyzed the conservative-liberal attitude change from the freshman to the senior year. The attitudes on war, religion, and the church demonstrated a consistent trend toward the liberal end of the continuum. Seth Arsenian investigated the value changes over a four year period on the Study of Values instrument. He found a differential pattern of value development in the social science and physical education divisions. Six additional longitudinal studies with the Allport-Vernon Study of Values revealed that freshmen consistently scored higher on the religious value and lower on the aesthetic value when these freshman scores were compared with their upperclass retest scores.

The Bennington College study by Newcomb found that students showed a significant change in social attitudes between their freshman and senior years. The students generally were classified as less conservative after four years of college attendance. The Cornell Values Study summarized that students were liberal on social issues but remained conservative on political and economic issues. The "Vassar Studies" illustrated a variety of freshman to upperclass changes in authoritarianism and general maturity. However, the senior year was judged as having additional turmoil and upset.

This was caused by the traumatic adjustment which had to be made in leaving friends and in preparing to face society's demands.

The "Jacob Report" in 1957 challenged the role higher education was playing in attitude and value adjustments. The student value changes that apparently took place at college were not very significant in any basic value movement. These college-induced changes helped the students to adjust more easily to societal demands. This report stimulated much of the later attitude and value research conducted on the college campus.

The studies on dogmatism utilized Rokeach's Dogmatism Scale-Form E, produced in 1960. The cross-sectional Santa Clara Study and the longitudinal Michigan State Study indicated that the college experience had produced students who had become less rigid, less authoritarian, less prejudiced, more flexible, and more open-minded over a four year time period.

Walter Plant's research at San Jose State College concluded that students who spent two and/or four years at college as well as college-aspiring nonattenders followed a trend in which ethnocentrism, authoritarianism and dogmatism declined. Plant concluded that the college experience had a facilitating effect in increasing the rate of certain nonintellectual changes.

The College Attendance Study by Trent and Medsker compared high school graduates who were immediately employed with those graduates who had attended four years of college. College students had highly significant and decidedly observable increases in openness, objectivity, and in flexibility of thinking when they were compared with the employed high school graduates. There was a strong relationship between entrance to

and length of stay in college and the growth of open-minded, flexible, and autonomous dispositions.

The Student Development Study at Stanford and Berkeley demonstrated that seniors were more open-minded, more tolerant, and had become less stereotyped in their view of right and wrong than when they were college freshmen. The project on Student Development in Small Colleges by Chickering found that positive changes in student development occurred at thirteen diverse colleges over a four year period of time. The schools did not inhibit the potential for change if the fit between school and student was compatible.

The historical study of college graduates helped to illustrate the insufficient empirical information that was available. The college alumni studies on dogmatism were non-existent. The studies on the persistence and stability of attitudes and values were generally limited to political, social, and economic issues.

The study conducted by Bugelski and Lester showed significant student change from conservative to liberal attitudes on social, economic, and political problems. The alumni retest of these attitudes illustrated that a liberal perspective continued to be maintained. Nelson in his study on social, economic, and political opinions stated that college-induced changes generally continued fourteen years after graduation at sixteen diverse colleges.

Bender's study at Dartmouth College suggested that the religious value position of society at any one time period would greatly influence the movement on the religious value scores of current college students. The comprehensive "Vassar Studies" found significant differentiation between five decades of alumni responses to attitude scales. The

conclusion to this research was that the tenor of the times in which these alumni were in school was directly related to the attitudes that persisted on the alumni retest.

Dr. T. M. Newcomb's restudy of Bennington College's graduates found that students had persisted in their relative positions on the conservative-liberal continuum. The political attitudes developed in college were maintained over a twenty-five year period between 1945 and 1960 without major change.

The discussion of previous research concluded the chapter with an invitation for new, methodologically sound research to fill the knowledge gap which existed in collegiate research. The need for alumni research in the areas of dogmatism and related value change were particularly acute.

CHAPTER III

DESIGN

Description of the Research Sample

The Department of Institutional Research at Wheaton College conducted a senior questionnaire for the graduating class of 1969.

In the 1969 questionnaire, an attempt was made to elicit data in a manner which would allow for acceptable inferences and generalizations to be made concerning the findings. The data gathering, therefore, was accomplished by a stratified random sample. To insure a representative sample of all students, approximately 25 per cent of the senior class was selected. A Senior Seminar was randomly selected from each of the major academic divisions. A time was arranged for the completion of the questionnaire with each departmental seminar. All seniors attending the seminar on the selected date were asked to complete the questionnaire before leaving the class.¹

The departments comprising the stratified sample, the number of male and female participants, the actual enrollment of the class, and the number of students who were in attendance on the specific data collection day are listed in Table I. The percentage of usable returns was derived by dividing the number of completed questionnaires by the number of students in attendance on the data collection day and not by the actual class enrollment.

The senior seminar classes used in this sample were randomly selected so that each senior would have an equal opportunity to be included in the research. The date chosen for the classroom data collection was unannounced so that some specific attempt could be made to eliminate the

¹Benjamin Sprunger, "The Class of 1969: Values, Attitudes, and Behavior," Wheaton College, Wheaton, Illinois, 1970, p. 1. (Mimeographed.)

selective response bias that generally is associated with such a personalized attitude and value instrument.

TABLE 1

ANALYSIS OF THE 1969 SENIOR QUESTIONNAIRE SAMPLE

Major/ Department	Class Enrollment	Attendance on Collection Day	Returns	Percentage
Literature	25	20	17	85.0
Education	23	21	21	100.0
Psychology	19	9	9	100.0
Chemistry/Math	20	20	16	80.0
History	20	12	12	100.0
Music	16	13	11	84.6
Bible/Christian Ed	11	11	11	100.0
Sociology	16	15	14	93.3
Totals	150	121	111	91.7
Unusable Returns			3	
Total Usable Returns			108*	89.3

*Sex of participants: Male 52, Female 56.

As indicated in Table 1, 121 seniors were in the respective seminar classes on the date chosen for the data collection. However, the total class enrollment was officially listed at 150 students. The difference between the class enrollment and the respondents to the original questionnaire has necessitated the inclusion of the entire class enrollment of 150 for the alumni retest. This was necessary because the specific identity

of the original questionnaire respondents had remained anonymous while the official class enrollment was available as part of an established, identifiable record contained within the registrar's office.

The data to study graduate patterns on the open-minded/closed-minded continuum was collected by a retest of the Rokeach Dogmatism Scale-Form E. One hundred and five alumni from the 1969 graduating class were identified as a representative sample of the 269 students who had taken this instrument while attending their senior year at Wheaton College. The graduate sample was representative of all major academic divisions.

The random, stratified selection process was identical to the one utilized in the senior questionnaire. Academic senior seminars were randomly selected from each major academic division. This process allowed each senior student who had taken the Dogmatism Scale to be eligible for the final alumni sample. When a seminar had been selected from each academic division, the enrollment roster was studied in order to identify the seniors who had taken the Dogmatism Scale. Table 2 indicates the number of students from each academic division's selected seminar who already were participants in the alumni Dogmatism Scale retest sample. The percentage of participation was derived by dividing the alumni sample by the senior class enrollment for each academic department.

Sixty-three students from the above alumni sample had taken the Rokeach Dogmatism Scale-Form E as freshmen. They are a representative sample of 150 students from the 1969 academic class who had taken this instrument as freshmen and again as seniors. The degree of change between these sixty-three freshman to senior dogmatism scores will be a relative base line of comparison in evaluating any subsequent change which may take place between the senior year dogmatism scores and the alumni retest

scores. The rate of change from freshman to senior years for college students will be some guide to the interpretation of any significant post collegiate dogmatism score changes.

TABLE 2
ANALYSIS OF ROKEACH DOGMATISM SCALE ALUMNI SAMPLE

Major/ Department	Seminar Class Enrollment	Alumni Sample	Percentage
Literature	25	19	76.0
Education	23	18	78.2
Psychology	19	11	57.8
Chemistry/Math	20	13	65.0
History	20	13	65.0
Music	16	12	75.0
Bible/Christian Ed	11	10	90.9
Sociology	16	9	56.2
Totals	150	105	70.0

Description of Wheaton College

The Carnegie Corporation asked Dr. Morris Keeton, academic vice president of Antioch College, and Dr. Conrad Hilberry, professor of English at Kalamazoo College, to conduct a study on the future threats that would challenge the very survival of private college education. Twelve private colleges were selected to be representative of a total perspective in private higher education. Research teams were sent to each campus to observe during the 1965-1966 school year.

Three criteria were used in selecting colleges for the profile: (1.) the schools had to differ from each other in kinds of students attracted, in educational programs and attitudes, in religious and social commitments, and in location; (2.) they had to be reasonably strong examples of their kind, to the extent that this could be judged in advance; and (3.) most of them had to be "free standing" liberal arts colleges.²

Wheaton College was selected to represent the conservative, Protestant religious position.

Though Wheaton's constituency is interdenominational, there is nothing uncertain about its position. Members of the faculty subscribe annually to a nine-point doctrinal statement, distinguished by its emphasis on the scriptures "as verbally inspired by God, and inerrant in the original writings, and . . . of supreme and final authority in faith and life," by its expectation of the "imminent return" of Christ, and by its conviction "that man was created by a direct act of God and not from previously existing forms of life, and that all men are descended from the historical Adam and Eve, first parents of the human race."³

This explicit doctrinal statement has assured a degree of unanimity and common agreement among the faculty that would be difficult to duplicate at most colleges.

Wheaton College has not restricted the doctrinal positions of its students, but the admissions procedure has required an acknowledged profession of faith in Jesus Christ. Furthermore, the conduct of the students was restricted by the annual signing of the "pledge." This was an agreement to refrain from "gambling, dancing, attendance at the theaters, the use of playing cards, alcoholic liquors, tobacco and membership in secret societies." These behavioral restrictions applied equally to faculty, administration, and students. The college did not place these restrictions as scriptural directives, but as specific mores that obviously created a student body and a campus atmosphere that was uniquely distinct from the

²Conrad Hilberry and Morris Keeton, Struggle and Promise: A Future for Colleges (New York: McGraw-Hill Book Company, 1969), p. viii.

³Ibid., p. 18.

other representative profile colleges.

The academic quality of entering Wheaton students was quite high on the conventional measures of ability and accomplishment. The median scores on the College Board's Scholastic Aptitude Test were above 600 on the math section and slightly below 600 on the verbal section. Sixty-one per cent of the men and 82 per cent of the women students came from the upper 10 per cent of their high school graduating class. Seventy per cent of all entering students indicated a definite interest in attending graduate school according to the Educational Testing Service's College Student Questionnaire.

The performance of Wheaton students on the Graduate Record area tests gave evidence of high academic accomplishment.

In the humanities area, Wheaton students rank well above the average of students from the twenty-two colleges and universities in the Educational Testing Service norm groups; in natural sciences, they rank noticeably above the norm group; in social sciences, they rank a shade lower than the norm group. . . . On the Graduate Record advanced tests, too, Wheaton seniors score consistently higher than seniors in the widely representative comparison groups, and Wheaton graduates are now sought by graduate and professional schools and by employers of all kinds.⁴

Keeton and Hilberry challenged the "unquestioned assumption that no one who accepts arbitrary limitations on his behavior or who publicly subscribes to a religious platform can be well educated and intellectually alive. Wheaton's restrictions on behavior and belief do create strains, but there can be little question of Wheaton's academic respectability and vigor."⁵

Wheaton's campus was described as a very formal atmosphere. This was evidenced by the formulation of clearly discernable student groups. However, the formality of the campus was consistent with the social

⁴Ibid., p. 22.

⁵Ibid., p. 21

background of the student body. It was apparent that most students came from families that had provided considerable structure to the daily life style. The students felt comfortable in a setting where the formal structure was conspicuous.

Wheaton's formality does not mean coldness or indifference. On the contrary, formality is associated with unusual friendliness. According to freshmen responses on the College and University Environment Scales, Wheaton ranks in the 90th percentile, in relation to a national sample of colleges and universities, on "Propriety" or orderliness of behavior; but also, it ranks at the 96th percentile on "Community." Students may feel confined at Wheaton, but they do not feel the anonymity or aimlessness that sometimes besets students on less formal campuses, the feeling that the world is equally indifferent to their presence or absence.⁶

One hundred fifty freshmen in 1965 were sampled on the College Student Questionnaire, and Wheaton's results were compared with students from various colleges and universities. In many ways it appeared that Wheaton students are from a typical college population. However, they were distinguished from other private colleges by their political, social, and religious attitudes. The political position of the parents demonstrated an overwhelming Republican tradition when only 7 per cent of the parents were self-classified as Democrats.

But not all student attitudes fit with a conservative stereotype. The Wheaton students are more concerned than the comparison groups with poverty in the United States, with lack of opportunity for non-WASPs in the United States, and with the welfare of the elderly. Even though Wheaton is not at all pacifist (two years of R.O.T.C. are required for men), 36 per cent of the sample, twice the proportion in the comparison group, "strongly agree" that conscientious objectors should be excused from military service.⁷

The students during the 1965-1966 school year had ample opportunity for exposure to new social and cultural experiences. Famous lecturers and outstanding musical groups were made available to the student body. The student publications provided clear statements and sophisticated

⁶Ibid., p. 36.

⁷Ibid., p. 37.

discussion on genuinely difficult issues. The three major campus publications in 1965 were awarded the All American rating in the annual Associated Collegiate Press competition. Over one thousand students participated in voluntary religious and social service programs. These programs included tutoring for inner-city high school students, providing free help to convalescent homes and mental hospitals, establishing coffee houses for alienated suburban teenagers, and developing recreational centers for deprived children from minority backgrounds.

On campus and off, Wheaton lays before its students a landscape of ideas and experiences more various than most of them have seen before. But the toppling and rebuilding of convictions, the basic reexamination of religious and intellectual positions essential to these students' growth seems to begin, usually with course work. In philosophy classes there are no unaskable questions and students often find themselves contending for their faith with Hume or Bertrand Russell. Sociology, anthropology and psychology suggest interpretations of human behavior that do not sit easily with the simpler versions of Fundamentalism. . . . Instructors ask students to read and take seriously non-evangelical theologians like Paul Tillich or Karl Barth, and existentialist writers like Camus or Sartre. Some are willing to discuss without evasion or oversimplification, the problems that persistently trouble students.⁸

Some students, including some of the most able ones, find Wheaton's confinements intolerable and leave. But for almost all those that stay, the college has, I believe, a liberalizing effect. For the majority of students, probably, Wheaton provides solid training, increased awareness of the artistic and intellectual world, more sophisticated Biblical and philosophical undergirding for their religious beliefs, and more flexible social and political attitudes.⁹

However they emerge, Wheaton students are obliged to put together belief and conduct in a systematic way. Through a remarkable combination of intellectual stimulation and tenacious opposition (on the part of the president, the trustees, and some faculty) to any departure from Evangelical faith and practice, the college creates discussion as intense, perhaps, as any to be found on American campuses, and as consistently directed to ultimate issues.¹⁰

Instrumentation

Rokeach Dogmatism Scale - Form E

Dr. Milton Rokeach's concept of dogmatism was introduced in 1956,

⁸Ibid., p. 38.

⁹Ibid., p. 39.

¹⁰Ibid., p. 40.

and it has stimulated hundreds of diversified research projects. This complex array of research has produced new insight into the concept of open and closed belief systems. However, many investigators have included the Dogmatism Scale in their research without appropriate rationale and without understanding Rokeach's original concept of dogmatism. Despite the apparent misunderstanding in some theoretical attempts to evaluate and compare dogmatism within the framework of many research projects,

. . . it is also apparent that dogmatism has been a fruitful concept, particularly as a generalized theory of authoritarianism. Research has demonstrated, through studies of dependency on authority and political ideology, that this authoritarianism is basically independent of ideological content. The concept of dogmatism has been extended beyond the laboratory manipulation of beliefs employing the Denny Doodlebug problem into broader social contexts. Research supporting the dogmatism concept has reported acceptable levels of statistical significance, a point which Rokeach noted was sometimes lacking in his own findings.¹¹

Dr. Ralph Vacchiano, Paul Strauss, and Leonard Hochman of Fairleigh Dickinson University reviewed the previous twelve years of research on the Rokeach concept of dogmatism. Some 120 studies were structured into ten areas of findings resulting in a complete evaluation and synthesis of dogmatism research.

Dogmatism and Authoritarianism

The research establishing Rokeach's Dogmatism Scale as a concept of general authoritarianism was in direct response to the specific, right authoritarianism produced by the California F Scale. In 1960, Dr. Walter Plant substantiated that the Dogmatism Scale was a better measure of general authoritarianism when he compared the F Scale and the D Scale of 2,350 American students. The recent 1968 study by David Hanson at Syracuse

¹¹Ralph B. Vacchiano, Paul S. Strauss, and Leonard Hockman, "The Open and Closed Mind: A Review of Dogmatism," Psychological Bulletin, Vol. II, No. 4 (April, 1969), 268.

University again demonstrated that the Dogmatism Scale tapped general authoritarianism while the F Scale tapped right authoritarianism. Research by Rokeach and Fruchter; Fruchter, Rokeach, and Novack; and Barker, Kerlinger, and Rokeach has produced additional support for this position.

Kerlinger and Rokeach studied the factorial nature of the F and D Scales. They wanted to determine if authoritarianism and dogmatism were connective parts of the same variables, or if they were separate but related concepts. They administered both scales to a total of 1,239 students divided between Michigan State University, Louisiana State University, and New York University. The resulting data was examined by factor analysis with oblique rotations.

The analyzed data indicated that:

. . . fascistic authoritarianism and dogmatism as measured, both seem to be parts of one underlying unity and, at the same time, discriminate entities. The substantial correlations between the F- and D-Scale total scores in the three samples and the predominantly positive correlation among the first-order factors speak for an underlying unity. There is little doubt, then, that F and D Scales are related phenomena with, probably, a common core of authoritarianism. But within this broad unity there are also distinguishable subunities, syndromes, or factors. This is clearly attested to by the separation of the items into 10 factors and by the general tendency for the F and D items to segregate themselves on different factors. . . . In conclusion, the evidence of this study shows that the F and D Scales are factorially discriminable, even though both are measures of authoritarianism. The evidence seems also to support some of the original hypotheses of the authors of The Authoritarian Personality and the author of The Open and Closed Mind. Finally, the data seem to be especially helpful in giving us greater insight into the seemingly paradoxical finding of high correlation between the F and D Scales, on the one hand, and their factorial discriminability, on the other hand.¹²

The Dogmatism Scale was representative of a generalized authoritarianism that was independent of any particular ideological framework. The

¹²Fred Kerlinger and Milton Rokeach, "The Factorial Nature of the F and D Scales," Journal of Personality and Social Psychology, Vol. IV, No. 4 (1966), 396.

Dogmatism Scale has clearly demonstrated its emphasis on belief structure rather than on specific content. The Dogmatism Scale had determined how a person believed rather than what a person believed.

Leftist Bias

The question of ideological bias was central to any determination of construct validity in the Dogmatism Scale.

Rokeach's own validation studies consistently yielded lower scale scores for liberals than for all other groups. Although undoubtedly more sensitive to dogmatism among those to the left of center than the F scale, the evidence from Rokeach's studies nevertheless points to the possibility of a bias in his scale.¹³

If the underlying theoretical construct about general authoritarianism was valid, then the measure of open-mindedness should be sensitive to dogmatism on the left as well as dogmatism on the right. Some researchers believed that the construction of a scale to adjust for the right bias of the F Scale had resulted in an overcompensated D Scale with a leftist bias.

Dr. Herbert Simons and Mrs. Nancy Berkowitz, speech professors at Temple University, conducted a study to answer this question concerning leftist bias. Questionnaires were given to 124 students in public speaking courses at Temple. Responses to the Dogmatism Scale were obtained from self-proclaimed liberals as well as self-proclaimed conservatives.

In view of the fact that in previous investigations (including Rokeach's own studies) liberals and other leftists have scored lower on dogmatism than rightists, tests of leftist bias became crucial in any determination of the construct validity of dogmatism scales. In this study the hypothesis that liberals would score lower on dogmatism than conservatives was confirmed. Additional data, however, suggested that the scores reflected real differences in dogmatism rather than defects in the Rokeach Scale.¹⁴

¹³Herbert W. Simons and Nancy N. Berkowitz, "Rokeach's Dogmatism Scale and Leftist Bias," Speech Monographs, Vol. 36, No. 4 (November, 1969), 459.

¹⁴Ibid., p. 463.

The findings of this study upheld the claim that the Dogmatism Scale appeared to be free of a leftist bias. The data provided additional evidence concerning the construct validity inherent within Rokeach's Dogmatism Scale. Rokeach himself speculated that liberals who were not extreme in their positions were in fact more open-minded. Liberals were expected to embrace a more flexible, democratic, and humanitarian framework. It would follow that a leftist bias should not be attributed to the instrument used solely on the basis of scale score differences. Higher dogmatism scores by students who were to the right on the liberal-conservative continuum might simply have reflected real differences in dogmatism rather than a leftist scale bias.

Dogmatism and Educational Psychological Research

Several studies have focused on the relationship between dogmatism and personality patterns. Personality scales such as the California Psychological Inventory, the Study of Values, the Edwards Personal Preference Schedule, and the Tennessee Self-Concept Scale have been used to demonstrate how a personality profile substantiated the formulation of the dogmatic belief structure.

Several investigators have stated that the poor self-concepts and personality maladjustments of some college students directly influenced their dogmatism scores. These studies have used the Sixteen Personality Factor Questionnaire, the Mooney Problem Check List, the Personality Orientation Inventory, and the MMPI scales to illustrate this factor. Developmental studies have additionally explored how parent-child relationships and socioeconomic status have become specific determinants of dogmatism. The level of open-minded development has a direct correlation with the ability to handle successfully interpersonal behavior

and to develop effective responses to most group situations.

Significant research has been performed to illustrate the effects of dogmatism on belief acquisition and learning. Ehrlich and Lee have extensively reviewed the literature on learning, and they came up with the following summary.

Given the available data, the basic proposition appears to be generally correct: closed-minded persons are less able than open-minded persons to learn new beliefs and to change old beliefs. Nevertheless, the principle remains to be qualified by a consideration of five intervening variables: the authority source of the new beliefs, the syndrome relevance of their mode of communication, the belief congruence and novelty of the new ideas, and the centrality to the individual. The relative effect of each of these variable considered independently and jointly remains to be established.¹⁵

The classroom studies by Ehrlich, Christensen, Zagora, and Zurcher; Baker, White, and Alter; Costin; and Rokeach and Norrell have demonstrated considerable differences in predicting by sex, by major, and by course offerings the relationship between dogmatism and academic performance. A number of positive results went beyond statistical significance, but the inconsistent, contradictory results have strongly illustrated the presence of uncontrolled, intervening variables which will have to be isolated in future research.

This summary would indicate general research support for the Dogmatism Scale and its supporting assumptions. However, selected questions still remain unanswered. There was some evidence that differences have existed between the sexes in defining dogmatism. There was some evidence that subcultural differences have existed which would necessitate the establishment of geographical norms. The question of dogmatism and personality patterns needs additional research. The implications of

¹⁵Howard J. Ehrlich and Dorothy Lee, "Dogmatism, Learning, and Resistance to Change: A Review and a New Paradigm," Psychological Bulletin, Vol. 71, No. 4 (April, 1969), 258.

dogmatism research on learning may result in major readjustments within the classroom. Despite the needs for additional research, it can be stated without reservation that the Dogmatism Scale has produced a variety of important data which has stimulated many diverse areas of research. If one could evaluate instruments by the amount and nature of inquiry they stimulate, the Dogmatism Scale has proven to be a potent research tool within a relatively short period of time.

Reliability and Validity

Both the concept of Dogmatism and the attendant scale have received such widespread research attention that additional evidence bearing upon their reliability and validity seems warranted. Rokeach reports test-retest reliability coefficients for the D scale ranging from .68 to .93, with a median of .74 for intervals ranging from 1 to 6 months. His evidence bearing upon the validity of the scale largely stems from comparisons of D-scale scores with cognitive and various other personality criteria, such as capacity to integrate new belief systems (Doodlebug problem solutions), differential aesthetic preferences, evaluations of peers and so on.¹⁶

Reliability measures reported for the Dogmatism Scale have generally been high for adult, college populations. Ehrlich in 1961 reported a test-retest correlation of .55 when the tests had been separated by five years. Zagora and Zurcher designed a study to compare the behavior of two extreme groups based on their distribution of dogmatism scores. Thirty students with high dogmatism scores and thirty students with low dogmatism scores were placed in two separate psychology classes at the University of Arizona. These two extreme groups were at the opposite ends of a total sample distribution of 517 students. The entire sample was retested fifteen weeks later in order to compare test-retest data on the Dogmatism Scale. The highest one-third of the total sample had a Pearson γ reliability of

¹⁶Salvatore V. Zagora and Louis A. Zurcher, Jr., "Notes on the Reliability and Validity of the Dogmatism Scale," Psychological Reports, 16 (1965), 1234.

.506 while the lowest one-third had a Pearson V reliability of .464. The entire sample had a Pearson V of .697. This overall reliability coefficient substantiated the reliability studies conducted by Rokeach on other samples. It was apparent that no great disparity in reliability existed between high scoring and low scoring dogmatic groups.

Vacchiano, Schiffman, and Strauss in 1967 conducted a factor analysis on the Dogmatism Scale. Pearson product-moment correlations were computed on all forty scale items for both males and females. The separate factor analyses were rotated to simple structure using the normal varimax method of rotation. A review of the factor formations for the entire group revealed that the individual factor formations tended to form around the theoretical definitions of scale items as given by Rokeach. Furthermore, even though there were some disagreements and unexplained gaps between Rokeach's conceptualizations and the differentiated factors, it seemed safe to assume that the Dogmatism Scale did have some sound empirical foundations.

Researchers have frequently employed the Dogmatism Scale as a uni-dimensional construct in their investigations. The failure to account for more than half of the total variance for the total group analysis (Vacchiano, Schiffman, and Strauss' 1967 Study) indicates that dogmatism, as measured by Rokeach's scale, is multi-dimensional. The results also suggest that the Dogmatism Scale may not be measuring similar dimensions of dogmatism for males and females and that the sex variable must be considered in defining dogmatism. The sex difference is due perhaps to the varying cultural roles played by men and women and the opportunities afforded them for expressing dogmatism. The Dogmatism Scale has proven to be a useful instrument and has enjoyed many meaningful applications, but like many other scales in widespread use, it is internally complex and multi-factorial. This study has suggested that exploration of the dogmatic personality, using Rokeach's Dogmatism Scale, may lead to misunderstanding and theoretical difficulties if the multi-dimensional character of the scale and sex variables are not considered.¹⁷

¹⁷Ralph B. Vacchiano, David C. Schiffman, and Paul S. Strauss, "Factor Structure of the Dogmatism Scale," Psychological Reports, 20 (1967), 851.

The items on the Dogmatism Scale were positively arranged statements in which high agreement resulted in a high dogmatism score. Several investigators have raised the issue of agreement response set. This factor would have caused a person to agree rather than disagree with a scale item when he was uncertain of his answer to a specific question. Couch and Keniston have constructed a special scale designed to measure a person's tendency to agree with test items regardless of their content. They found a significant relationship between dogmatism and two measures of acquiescence, a measure of impulsivity and the number of true responses on the MMPI. In 1967, Katz and Katz stated that dogmatism score changes for college students came as a result of a newly developed "disagreement" response set. The average student became more disagreeable during his exposure to college.

The major criticism to Rokeach came from Peabody who, in his two publications, raised the issue of response bias and the phenomena of double agreement to completely diverse concepts. Peabody believed that both problems related to the differential ambiguity of the Dogmatism Scale items.

Rokeach offered three hypotheses in response to Peabody's question concerning the double agreement phenomena. Rokeach believed that it was possible for a person to agree with a statement on an authoritarian scale and also with its identical opposite,

. . . because of response bias (hypothesis A), because he tells the truth when responding to the original items and he lies when responding to the reversed items (hypothesis B), or because he believes both statements, yet remains unaware of the contradiction through an act of compartmentalization or because he has a weak need for logical consistency (hypothesis Ba).¹⁸

¹⁸Milton Rokeach, "Authoritarianism Scales and Response Bias: Comment on Peabody's Paper," Psychological Bulletin, Vol. 67, No. 5 (1967), 349.

Rokeach favored the last hypothesis, Ba, as the most plausible explanation of the double agreement phenomena on authoritarianism scales. Independent research from various studies has illustrated that there has not been any clear evidence to confirm the original Peabody contention that the Dogmatism Scale items were ambiguous.

It is perhaps time now, after at least a decade's research on response-bias factors within authoritarianism scales, to abandon this interpretation. It appears to account neither for the substantive findings nor for the double agreement findings obtained with authoritarianism scales.¹⁹

Wheaton College Senior Questionnaire--1969 Alumni Revision

It has been the practice of Wheaton College to query its seniors about various aspects of their educational experience. Traditionally, the Senior Questionnaire attempted to elicit information about the students' academic and social/attitudinal development. The 1969 Senior Questionnaire was a departure from this traditional approach. The academic area was not included in the 1969 instrument and greater effort was made to ascertain the value, attitude, and behavioral framework of Wheaton College seniors. An additional aspect of this instrument was the questions that were repeated from the 1969 Senior Questionnaire. This repeated section was designed to determine what attitudes, behaviors, and values were differentiated between the 1961 and the 1969 senior classes. The newly designed questions and the repeat questions were selected after a pilot study had been conducted with fifty students to determine instrument validity.

The 1969 Senior Questionnaire had thirty-one objective questions and five open-ended questions. The alumni revision was scaled down to twenty-two objective questions and the open-ended questions were eliminated

¹⁹Ibid., p. 354.

because of the extreme difficulty in providing an accurate answer evaluation. The alumni revised instrument remained consistent with the wording of the 1969 instrument although the grammatical structure had been altered to accommodate the alumni status of the respondents.

The first three questions of the alumni questionnaire were used for nonrelated research purposes, and they were not included in the final analysis of this research. Questions four through twelve were originally included in the 1961 Senior Questionnaire, and they were reused in 1969 so that a comparison of attitudes and values could be analyzed between different college classes. Questions thirteen through twenty-one were designed and utilized exclusively for the 1969 instrument. Question twenty-two was altered for the alumni revision since it attempted to gather specific information concerning the actual behavior of the alumni. The nineteen testable questions from the revised alumni instrument were used to compare the alumni responses with those expressed by the seniors on the same nineteen questions from the 1969 Senior Questionnaire. The change and/or lack of change between these responses was the major contribution on the attitude, value, and behavioral research contained within this dissertation.

Question five, "How would you evaluate opportunities at Wheaton for the development of social competence?" was designed to determine the students' perception of the social milieu. The results from the 1961 and 1969 questionnaires indicated that the 1969 class viewed the campus as less adequate in developing social competencies than did the students in 1961. However, since the design of the instrument was to elicit self-perceived values and behavior and not actual conditions, it was somewhat difficult to interpret any significant differentiation between the classes. The alumni revised questionnaire should provide another dimension because the

self-perceived changes were longitudinal with the same basic student population being retested.

Wheaton College has maintained that one of its distinctives has been the total integration of knowledge and Christian thought. The personal increase in spiritual insight and an interest in sharing the Christian faith were specific signs that this integration has been operative. Questions six, seven, and nine were designed to evaluate the students' opinions as to the adequacy of this integration and the reality of such an integration in actual personal experience. The alumni response was expected to provide indications as to how the answers given while in college have been crystalized after graduation. It was anticipated that the postgraduate experience was influential in the graduates' perceptions of attitude and value positions.

Question eight, "At approximately what age did you accept Christ as Savior?" was specifically included as a selected factual question to verify the reliability of the students' responses on the 1969 questionnaire and again on the alumni retest. It was anticipated that the response to this question would be the same for both instruments. The agreement between samples to this question helped to authenticate the reliability of the alumni sample as being representative of the 1969 student sample.

In an attempt to measure the attendance patterns of corporate worship, questions ten, eleven, and twelve were asked. The frequency of attending Sunday school and morning and evening worship as alumni was compared with the reported pattern of attendance while the respondents were seniors. If the measuring of attendance patterns were indicators of actual behavior, and if participation in a traditional corporate worship

experience was indicative of religious concern, then the data from these questions should provide some insight into the alumni's maintenance/disassociation of religious values after graduation.

Questions thirteen, fourteen, fifteen, and sixteen were developed to measure the perceived sensitivity of various campus populations. The 1969 seniors were asked to rank other students, faculty, administrators, and student personnel deans as to their respective sensitivity to students. The concept was initiated to ascertain what influence the postgraduate experience had upon the perception of campus relationships.

The five questions, seventeen through twenty-one, were designed to elicit data on the contemporary moral issues: drugs, the pill, premarital sex, responsibility in dating intimacy, and the general liberalization of selected behavioral value positions. The purpose was to evaluate the persistence factor of self-perceived values as a person matures from college to a postgraduate adult perspective. These five questions were a major contribution in analyzing the nature of sustaining a conservative value position within the postgraduate experience of societal demands. The questions were presented to compare the student responses with the responses generated by the alumni sample.

The final question, twenty-two, was designed to assess the behavior and subsequent attitude attached to that behavior as it related to Wheaton College's standards of conduct. The alumni were asked to indicate the extent of their participation in the activities of dancing, smoking, drinking, and card playing before coming to Wheaton, while at Wheaton, and after leaving the institution. The last section was a comparison between anticipated participation after graduation (given as a senior) and actual experienced

as an alumnus. This question involved a self-reported analysis as to the maintenance and/or change of significant behavioral expressions contained within a value structure and examined over a period of time. It was assumed that the change and/or lack of change in behavior was a reflection on the attitudes and values that had been developed by this college/alumni population.

The final summary concerning this alumni questionnaire was incomplete unless:

. . . certain precautions were exercised in drawing conclusions and generalizations. Although sampling procedures were improved from previous senior questionnaires, and statistically the sample can be considered representative, the methodology of eliciting information by questionnaires is at best a tenuous procedure. Assuming, however, the questionnaire has sufficient validity and reliability, another problem arises when self-reported perceptions are considered to be indicators of actual behavior. In actuality what a person says he feels and believes²⁰ and what he actually does (behaviorally) may be totally different.

Assumptions

This research project was developed within a framework that included several basic assumptions. One assumption was that Wheaton College was a unique institution which tended to attract students who were considerably different from the student populations of most small, liberal arts colleges. This assumption was adequately analyzed by Keeton and Hilberry. The social and religious distinctions were most noticeable.

Nearly all the Wheaton students went to public high school, did good work there, and took part in extracurricular affairs. But socially they were distinct. Seventy percent never or almost never went to a movie during their last year in high school, and 45 percent listened to no popular music, or almost none. About half dated not

²⁰ Sprunger, "The Class of 1969," p. 14.

at all or not oftener than once a month sometimes, no doubt, because their parents discouraged dating outside their church. There are no statistics to identify the religious attitudes that characterize entering Wheaton students. Almost without exception they are "Conservative Evangelicals." This term may have slightly different content from church to church, but generally it means belief in the Bible as the inspired and inerrant Word of God, acceptance of the vicarious atonement of Jesus Christ, and expectations of the Second Coming. For many students it implies daily devotions and witnessing or testifying to their faith. For almost all of them, it means an attempt to see life in religious terms that is rare among college students.²¹

A second assumption was that the structure of Wheaton College provided a unique setting that would specifically influence the students' development. Keeton and Hilberry have clearly illustrated how the standards of faith endorsed by the faculty have provided a uniform perspective that has contributed to the particular influence of Christian values into all areas of academic learning. The standards of conduct commonly called the "pledge" have provided a specific limitation to the personal freedom and activity life style of the entire campus population.

The first two assumptions are the basic tenets to the following belief that directly conditions the outcome of this research. It was assumed that the unique student body along with the unusual setting provided by the institution would combine to produce a graduate who would need to make considerable adjustment once he left the provincial confines of Wheaton College. The adjustment to the demands of society was one assumption that led to the expectations of this research. The research was designed to analyze the anticipated change which could take place in the area of values, attitudes, behavior, and dogmatism once the college experience had terminated.

The press of society should provide a new perspective that suggests

²¹Hilberry and Keeton, Struggle and Promise, p. 37.

additional answers to the question of what was thought to happen to the development of a person when he was confronted with a set of circumstances and environmental conditions that were significantly different from his previous experiences. It was assumed that the collegiate press and the societal press were diverse influences that effected the longitudinal responses to the two instruments used in this research. The question was asked as to what degree attitudes, values, behavior, and dogmatism changed according to the specific demands related to the unique aspects of each encountered press. If change did not occur then it would appear that the societal press for a Wheaton College graduate did not significantly affect the values, attitudes, and behavioral framework which was developed during college.

Statistical Hypotheses

The data from the senior year dogmatism scales and the revised alumni dogmatism scales were analyzed by "t" tests in order to determine any significant differences. The "t" test was used for the Dogmatism Scale because it measured data which was quantitatively expressed in a continuous fashion.

The research employed the null form of the hypothesis because the Dogmatism Scale data was used to test the reliability of a difference between means. The null form was a convenient way of stating that there was no true difference between compared means. The probability level was arbitrarily set at the .05 level of significance. This level of statistical confidence demonstrated that mean differences were not due to chance but to actual differences in the data. Therefore, the null hypothesis was rejected

whenever the difference between the means was above the .05 level of significance. The null hypothesis was accepted whenever the difference between the means was ruled to be below the .05 level of statistical confidence.

The statistical hypotheses for dogmatism are given as follows:

1. There was no significant difference between the mean dogmatism score of male Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.
2. There was no significant difference between the mean dogmatism score of female Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.
3. There was no significant difference between the mean dogmatism score of male and female Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.
4. There was no significant difference between the mean dogmatism score of senior male students who had attended Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.
5. There was no significant difference between the mean dogmatism score of senior female students who had attended Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.
6. There was no significant difference between the mean dogmatism score of senior male and female students who had attended

Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.

The questions from the 1969 Senior Questionnaire that were repeated on the revised alumni questionnaire were statistically analyzed by the Chi Square Tests for significance of difference. The Chi Square Tests were used because the data on the instruments were discreet as expressed in frequencies and categories. The actual Chi Square was calculated by comparing the sum of an expected frequency for a specified category with the sum of the observed frequency for the same specific category. The a priori hypotheses were used because the data from the 1969 Senior Questionnaire represented the research which provided the expected frequency for each category, on each question for the revised alumni questionnaire. The observed frequency was the actual response to each category, and each question as given by the alumni group.

The level of statistical significance was similar to the Dogmatism Scale procedure in that the .05 level of significance was considered the minimum level of probability needed to provide a decision on the acceptability of the data.

The expected frequencies in the null hypothesis represented the anticipated answers that would be given on the retest alumni questionnaire as a result of building expectations based upon the responses to the questions/categories of the 1969 Senior Questionnaire. The observed frequencies in the null hypothesis represented the actual responses given on the revised alumni questionnaire. The differences between the expected and the observed responses provided the statistical framework in which the data was analyzed.

The statistical hypotheses for attitude, value, and behavior change are given as follows:

7. There was no significant difference between the expected and observed frequencies in recommending friends to attend Wheaton College.
8. There was no significant difference between the expected and observed frequencies in evaluating the opportunities to develop social competence while attending Wheaton College.
9. There was no significant difference between the expected and observed frequencies in determining what extent a Wheaton College education helped to integrate all areas of life into a meaningful, Christ centered pattern.
10. There was no significant difference between the expected and the observed frequencies concerning the interest in spiritual matters while attending Wheaton College.
11. There was no significant difference between the expected and the observed frequencies in relationship to interest in missions while attending Wheaton College.
12. There was no significant difference between the expected and observed frequencies in regards to Sunday morning church attendance upon graduation.
13. There was no significant difference between the expected and observed frequencies in regards to Sunday evening church attendance upon graduation.
14. There was no significant difference between the expected and the observed frequencies in relationship to interest in missions while attending Wheaton College.

15. There was no significant difference between the expected and observed frequencies in relationship to the faculty's perceived sensitivity to the student population.
16. There was no significant difference between the expected and observed frequencies in relationship to the sensitivity demonstrated by other students to the individual student.
17. There was no significant difference between the expected and observed frequencies in relationship to the student personnel deans' sensitivity to the individual student.
18. There was no significant difference between the expected and observed frequencies in relationship to the administration's sensitivity to the individual student.
19. There was no significant difference between the expected and observed frequencies of Wheaton College graduates who would occasionally consider using marijuana.
20. There was no significant difference between the expected and observed frequencies of Wheaton College graduates who would consider living unmarried with a member of the opposite sex and using the "pill" as a means of not having children.
21. There was no significant difference between the expected and observed frequencies of Wheaton College graduates who would adopt liberal attitudes on sex, drugs, and alcohol in order to keep these standards current with societal norms.
22. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to the women's role in determining how intimate should be a dating relationship.

23. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in considering pre-marital sexual intercourse as an important experience for early marital adjustment.
24. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in dancing.
25. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in smoking.
26. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in the use of alcohol.
27. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to the actual participation in the use of playing cards.

Summary

The third chapter analyzed the research design and the instrumentation for this study. Descriptions of the research sample were given for the alumni revision of the Senior Questionnaire and for the alumni retest of the Dogmatism Scale-Form E. The data gathering was accomplished by a stratified random sample which insured representation for the entire student population that was under consideration.

The Carnegie Corporation asked Dr. Morris Keeton and Dr. Conrad Hilberry to conduct a study on the future threats that would challenge the very survival of private college education. Twelve private colleges were selected as strong examples that would represent a total perspective

in private higher education. Wheaton College was selected to represent the conservative, Protestant religious position. The detailed description of Wheaton College was taken from this profile as related in the book Struggle and Promise: A Future for Colleges.

The discussion on the instrumentation of this research included an analysis of Rokeach's Dogmatism Scale-Form E. The survey of recent research established the Dogmatism Scale as a concept of general authoritarianism in direct contrast to the right authoritarianism of the California F Scale. The Dogmatism Scale demonstrated its emphasis on belief structure rather than on specific ideological content. The analysis of construct validity concluded that the Dogmatism Scale appeared to be reasonably free of a leftist scale bias.

The discussion on the reliability and validity included the research that provided a factor analysis of the Dogmatism Scale. Even though there were some disagreements between Rokeach's conceptualizations and the differentiated factors, the Dogmatism Scale had sufficient validity to build a sound empirical foundation.

The alumni revision of the Senior Questionnaire was described in specific detail. The major questions provided the opportunity to analyze self-reported behavioral patterns over a period of time. It was assumed that the change and/or lack of change in self-reported attitudes, values, and behavior were a reflection of the collegiate and societal press encountered by this specific college/alumni population. The question was asked as to the degree of change in attitudes, values, and behavior according to the specific demands of each unique press. If change did not occur, then it appeared that the societal press for a Wheaton College graduate did not significantly affect the values, attitudes, and

behavioral framework which was developed during the college experience.

The data from the revised alumni dogmatism scores were analyzed by "t" tests in order to determine any significant differences from the senior year dogmatism scores. The "t" test was used because it measured data which was quantitatively expressed in a continuous fashion. The null form of the hypothesis was employed in order to test the reliability of a difference between means. The data from the 1969 Senior Questionnaire and the revised alumni questionnaire were statistically analyzed by the Chi Square Tests for significance of difference. The Chi Square Tests were used because the data on the instruments were discrete as expressed in frequencies and categories. The a priori null hypothesis was designed to anticipate alumni answers from expectations based upon the responses to the questions/categories of the 1969 Senior Questionnaire.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

In chapter four, the assembled data was analyzed and presented within the framework of the stated hypotheses. The first six hypotheses were associated with Rokeach's Dogmatism Scale-Form E, and the last twenty-one were related to the Alumni Revised Senior Questionnaire. The former hypotheses were analyzed for the significance of the difference between means of matched groups to determine the "t" values for these equivalent groups. The latter hypotheses were analyzed by the Chi Square Tests to conclude what significant difference existed between the expected and observed frequencies. Since the Chi Square was not stable when any expected or observed frequency in any cell was less than five, a compensation for errors was operative whenever an individual cell was below five.

The author used the "t" test on the group means of 143 freshmen and repeated senior dogmatism scores to provide some base line comparison for any postgraduate dogmatism score changes. The freshman dogmatism scores were obtained in 1965, and the repeated senior dogmatism scores were gathered in 1969 from the identical students. Sixty-eight women and seventy-five men scores were usable in this longitudinal freshman to senior study of college dogmatism score changes.

The following tables (1 and 2) demonstrate that dogmatism scores did change from the freshman year to the senior year at this Christian

oriented, liberal arts college even though the students came from conservative, evangelical Protestant backgrounds. Both the men and women students became significantly more open-minded during their college experience. The mean score changes were statistically significant at the .001 level of confidence for both men and women.

TABLE 1

WOMEN DOGMATISM SCORES

Source	Year	N	Mean	S.D.	t
Freshmen	1965	68	162.35	23.75	3.99*
Seniors	1969	68	145.65	25.04	

*Significant at the .001 level of confidence.

TABLE 2

MEN DOGMATISM SCORES

Source	Year	N	Mean	S.D.	t
Freshmen	1965	75	162.11	18.31	5.51*
Seniors	1969	75	143.75	22.33	

*Significant at the .001 level of confidence.

Sample Returns

The Dogmatism Scale-Form E had a 91 per cent sample return with ninety-six instruments being received from the 105 students who were identified for this research sample. Forty-six men and fifty women dogmatism scores were available for the statistical analysis of senior to postgraduate

changes on the open-minded/closed-minded continuum.

The Alumni Revised Senior Questionnaire was sent to 150 new alumni from the 1969 graduating class. One hundred and thirty usable questionnaires were returned for a sample recovery of 87 per cent. The usable data from the original 1969 Senior Questionnaire contained 108 completed instruments. Consequently, the same number of completed student questionnaires was necessary from the alumni form in order to use the Chi Square Test, which demanded an equal N. Therefore, it became necessary to randomly select out twenty-two additional instruments from the alumni return total of 130. A table of random numbers was used to determine which instruments were expendable. The analyses from the 1969 Senior Questionnaire and the Alumni Revised Questionnaire were based upon an equal N of 108 for both the expected and observed frequencies.

Data Presentation

The following procedure was used in the data presentation. The specific hypothesis relating to the data was restated. The data was illustrated in the form of a table, a probability statement was made concerning the data, and a statement was made to either accept or reject the stated hypothesis.

The hypotheses and related research data from the Dogmatism Scale were given as follows:

1. There was no significant difference between the mean dogmatism score of male Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.

TABLE 3

MALE DOGMATISM SCORES

Source	N	Mean	S.D.	t
Senior Scores	46	147.85	24.03	0.27
Postgraduate Scores	46	149.26	25.54	

The t score of 0.27 was decisively below the necessary level to be considered statistically significant. The hypothesis was accepted that there was no basic difference between the dogmatism score of Wheaton College male students as seniors and as retested alumni.

2. There was no significant difference between the mean dogmatism score of female Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.

TABLE 4

FEMALE DOGMATISM SCORES

Source	N	Mean	S.D.	t
Senior Scores	50	156.82	24.46	0.03
Postgraduate Scores	50	156.96	26.75	

The t score of 0.03 demonstrated that little actual difference existed between the dogmatism scores of Wheaton College female students as seniors and as retested alumni. The hypothesis was accepted.

3. There was no significant difference between the mean dogmatism score of male and female Wheaton College students who were tested as seniors and the mean dogmatism score of the same students nineteen months after graduation.

This hypothesis was accepted without a statistical analysis of the data. It was clearly demonstrated by Tables 3 and 4 that little potential for difference was contained within the college and post-college dogmatism scores. The combined totals held little possibility of providing evidence that would cause the rejection of the hypothesis.

4. There was no significant difference between the mean dogmatism score of senior male students who had attended Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.

TABLE 5

MALE DOGMATISM SCORE--NON-TRANSFER

Source	N	Mean	S.D.	t
Senior Score	32	145.34	23.48	0.29
Postgraduate Score	32	147.16	26.12	

The t score of 0.29 was decidedly below the necessary level for statistical significance. The hypothesis was accepted that there was no difference between the dogmatism scores of senior men and retested alumni. It was evident that "non-transfer" status had little appreciable influence as a factor in the dogmatism score changes of college graduates.

5. There was no significant difference between the mean dogmatism score of senior female students who had attended Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.

TABLE 6

FEMALE DOGMATISM SCORES--NON-TRANSFER

Source	N	Mean	S.D.	t
Senior Scores	23	150.96	24.16	0.65
Postgraduate Scores	23	155.26	20.47	

The t score of 0.65 was well below the necessary statistical level to declare any significant difference. Consequently, the hypothesis was accepted that no difference existed between the dogmatism scores of seniors and recent alumni who had attended Wheaton College for all four years of their college experience.

6. There was no significant difference between the mean dogmatism score of senior male and female students who had attended Wheaton College for four years and the mean dogmatism score for the same students nineteen months after graduation.

This hypothesis was accepted without a statistical analysis of the data. It was demonstrated beyond any reasonable doubt by hypotheses 5 and 6 that little if any difference was contained within the college and post-college dogmatism scores of those individuals who had attended the same institution for four years.

The hypotheses and data from the Alumni Revised Senior Questionnaire are given as follows:

7. Hypothesis generated from question four: (See Appendix A for a complete Alumni Revised Senior Questionnaire.) There was no significant difference between the expected and observed frequencies in the recommendation of friends to attend Wheaton College.

TABLE 7
RECOMMENDING ATTENDANCE AT WHEATON COLLEGE

Source	Definitely	Probably	Neutral	Probably Not	Definitely Not
Expected Frequencies (1969 Responses)	20	62	19	6	1
Observed Frequencies (1971 Responses)	31	41	22	9	5
(Degree of Freedom) D.F.=4	(Chi Square) X ² =7.709		(Statistical Significance) .05=9.488		

The Chi Square of 7.709 was not significant at the .05 level of confidence. Consequently, the hypothesis was accepted that no true difference existed between the senior-alumni responses to friends concerning Wheaton College as a recommended place to attend school.

8. Hypothesis generated from question five: There was no significant difference between the expected and observed frequencies in evaluating the opportunities to develop social competence while attending Wheaton College.

TABLE 8

OPPORTUNITY TO DEVELOP SOCIAL COMPETENCE

Source	Excellent	Good	Fair	Poor
Expected Frequencies	4	42	39	23
Observed Frequencies	9	48	38	13
D.F.=3	X ² =5.114	.05=7.815		

The Chi Square of 5.114 was not significant at the .05 level of confidence. The hypothesis was accepted in that the alumni and senior responses were similar in evaluating the opportunities to develop social competence while attending Wheaton College.

9. Hypothesis generated from question six: There was no significant difference between the expected and observed frequencies in determining to what extent a Wheaton College education helped to integrate all areas of life into a meaningful, Christ-centered pattern.

TABLE 9

INTEGRATION OF LIFE INTO A CHRIST-CENTERED PATTERN

Source	Helped Much	Helped	Neither (Neutral)	Hindered
Expected Frequencies	25	58	15	10
Observed Frequencies	27	56	13	12
D.F.=3	X ² =0.437	.05=7.815		

The Chi Square of 0.437 strongly indicated that there was no actual difference between the alumni and the senior responses in evaluating how a

Wheaton education had helped integrate life into Christ-centered patterns.

The hypothesis was accepted.

10. Hypothesis generated from question seven: There was no significant difference between the expected and the observed frequencies concerning the interest in spiritual matters while attending Wheaton College.

TABLE 10

DEVELOPMENT OF INTEREST IN SPIRITUAL MATTERS

Source	Greatly Increase	Increase	Same	Decline
Expected Frequencies	14	52	28	14
Observed Frequencies	22	38	27	21

D.F.=3

$\chi^2=5.374$

$.05=7.815$

The Chi Square of 5.374 was not significant at the .05 level of confidence. The hypothesis was accepted that the senior and alumni responses were not different in evaluating the development of interest in spiritual matters.

11. Hypothesis generated from question nine: There was no significant difference between the expected and the observed frequencies in relationship to interest in missions while attending Wheaton College.

TABLE 11

INTEREST IN MISSIONS AND EVANGELISM

Source	Greatly Increase	Increase	Same	Decline	No Interest
Expected Frequencies	20	30	39	13	6
Observed Frequencies	12	28	44	19	5
D.F.=4	X ² =3.586			.05=9.488	

The Chi Square of 3.586 was not significant at the .05 level of confidence. The hypothesis was accepted that alumni and senior responses to missions and evangelism were not different.

12. Hypothesis generated from question ten: There was no significant difference between the expected and the observed frequencies in regards to Sunday morning church attendance upon graduation.

TABLE 12

SUNDAY MORNING CHURCH ATTENDANCE

Source	Regularly	Frequently	Occasionally	Rarely
Expected Frequencies	53	16	12	27
Observed Frequencies	60	16	14	18
D.F.=3	X ² =2.388		.05=7.815	

The Chi Square of 2.388 was not significant at the .05 level of confidence. The hypothesis was accepted that the senior and alumni responses were not different in self-reported attendance at Sunday morning worship services.

13. Hypothesis generated from question eleven: There was no significant difference between the expected and observed frequencies in regards to Sunday evening church attendance upon graduation.

TABLE 13

SUNDAY EVENING CHURCH ATTENDANCE

Source	Regularly	Frequently	Occasionally	Rarely
Expected Frequencies	15	20	15	58
Observed Frequencies	28	11	17	52

D.F.=3

X²=6.996

.05=7.815

The Chi Square of 6.996 was not significant at the .05 level of confidence. However, it did reach the .10 level of confidence and may suggest some trends in Sunday evening church attendance between self-reported responses of seniors and alumni. The hypothesis was accepted.

14. Hypothesis generated from question twelve: There was no significant difference between the expected and observed frequencies in regards to Sunday school attendance after graduation.

TABLE 14

SUNDAY SCHOOL CHURCH ATTENDANCE

Source	Regularly	Frequently	Occasionally	Rarely
Expected Frequencies	15	11	7	75
Observed Frequencies	23	13	15	57

D.F.=3

X²=7.215

.05=7.815

The Chi Square of 7.215 was not significant at the .05 level of confidence. However, it did reach the .10 level of confidence and may suggest some trends in Sunday school attendance between self-reported responses of seniors and alumni. The hypothesis was accepted.

15. Hypothesis generated from question thirteen: There was no significant difference between the expected and observed frequencies in relationship to the faculty's perceived sensitivity to the student population.

TABLE 15
FACULTY SENSITIVITY TO THE STUDENTS

Source	Very Sensitive	Somewhat Sensitive	Rarely Sensitive	Insensitive
Expected Frequencies	21	67	16	4
Observed Frequencies	36	57	14	1

D.F.=3

$\chi^2=4.925$

.05=7.815

The Chi Square of 4.925 was not significant at the .05 level of confidence. The hypothesis was accepted that little difference was given between the senior-alumni responses to student perception of faculty sensitivity.

16. Hypothesis generated from question fourteen: There was no significant difference between the expected and observed frequencies in relationship to the sensitivity demonstrated by other students to the individual student.

TABLE 16

STUDENT SENSITIVITY TO OTHER STUDENTS

Source	Very Sensitive	Somewhat Sensitive	Rarely Sensitive	Insensitive
Expected Frequencies	19	68	17	4
Observed Frequencies	37	57	13	1
D.F.=3	X ² =7.061		.05=7.815	

The Chi Square of 7.061 was not significant at the .05 level of confidence. However, the Chi Square did go beyond the .10 level of confidence. The hypothesis was accepted, but the trend could demonstrate some potential difference between the senior and alumni responses to student sensitivity.

17. Hypothesis generated by question sixteen. There was no significant difference between the expected and observed frequencies in relationship to the student personnel deans' sensitivity to the individual student.

TABLE 17

STUDENT PERSONNEL DEANS' SENSITIVITY TO STUDENTS

Source	Very Sensitive	Somewhat Sensitive	Rarely Sensitive	Insensitive
Expected Frequencies	23	42	24	19
Observed Frequencies	21	49	20	18
D.F.=3	X ² =1.020		.05=7.815	

The Chi Square of 1.020 was not significant at the .05 level of confidence. It was evident that the senior-alumni responses were very similar in regards to the student personnel deans' sensitivity to student needs. The hypothesis was accepted.

18. Hypothesis generated by question fifteen: There was no significant difference between the expected and observed frequencies in relationship to the administration's sensitivity to the individual student.

TABLE 18

ADMINISTRATION'S SENSITIVITY TO STUDENTS

Source	Very Sensitive	Somewhat Sensitive	Rarely Sensitive	Insensitive
Expected Frequencies	5	39	41	23
Observed Frequencies	8	40	39	21
D.F.=3	X ² =0.846		.05=7.815	

The Chi Square of 0.846 was not significant at the .05 level of confidence. The senior-alumni responses remained constant in evaluating the administration's sensitivity to students. It was apparent that the greatest percentage of respondents were not satisfied with the administration sensitivity. The hypothesis was accepted.

19. Hypothesis generated by question seventeen: There was no significant difference between the expected and the observed frequencies of Wheaton College graduates who would occasionally consider using marijuana.

TABLE 19

OCCASIONAL USE OF MARIJUANA

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	3	9	18	78
Observed Frequencies	3	17	19	69
D.F.=3	X ² =2.487		.05=7.815	

The Chi Square of 2.487 was not significant at the .05 level of confidence. The hypothesis was accepted that little difference was given between the senior-alumni responses to the occasional use of marijuana.

20. Hypothesis generated by question eighteen: There was no significant difference between the expected and the observed frequencies of Wheaton College graduates who would consider living unmarried with a member of the opposite sex and using the "pill" as a means of not having children.

TABLE 20

UNMARRIED COHABITATION WITH MEMBER OF OPPOSITE SEX

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	1	6	13	88
Observed Frequencies	2	9	16	81
D.F.=3	X ² =0.618		.05=7.815	

The Chi Square of 0.618 strongly demonstrated that no difference existed between the senior-alumni responses to the question of unmarried cohabitation with a member of the opposite sex. The hypothesis was accepted. The strong percentage of disagreement with the question was noted.

21. Hypothesis generated from question nineteen: There was no significant difference between the expected and observed frequencies of Wheaton College graduates who would adopt liberal attitudes on sex, drugs, and alcohol in order to keep these standards current with societal norms.

TABLE 21

ADOPTION OF LIBERAL ATTITUDES ON SEX, DRUGS, AND ALCOHOL

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	1	5	27	75
Observed Frequencies	0	6	24	78

D.F.=3

X²=0.105

.05=7.815

The Chi Square of 0.105 clearly demonstrated the inconsequential difference between the senior-alumni responses toward the adoption of liberal attitudes. However, the strong disagreement toward liberal standards on sex, drugs, and alcohol because of peer influence was noted. The hypothesis was accepted.

22. Hypothesis generated from question twenty: There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to the woman's role in determining how intimate should be a dating relationship.

TABLE 22

DATING RELATIONSHIP INTIMACY CONTROLLED BY WOMAN

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	6	25	32	45
Observed Frequencies	5	24	39	40

D.F.=3

X²=1.096

.05=7.815

The Chi Square of 1.096 was not significant at the .05 level of confidence. The hypothesis was accepted that the senior-alumni responses were not different in regards to the woman's role in determining the intimacy of a dating relationship.

23. Hypothesis generated by question twenty-one: There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in considering pre-marital sexual intercourse as an important experience for early marital adjustment.

TABLE 23

PRE-MARITAL SEXUAL INTERCOURSE FOR EARLY MARITAL ADJUSTMENT

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	2	3	21	82
Observed Frequencies	1	12	22	73

D.F.=3

X²=4.680

.05=7.815

The Chi Square of 4.680 was not significant at the .05 level of confidence. The senior and alumni responses were not different in regards to considering pre-marital sexual intercourse as an important experience for early marital adjustment. The hypothesis was accepted. The high percentage for strongly disagree was noted.

The next four hypotheses were generated by question twenty-two which asked about the participation in dancing, smoking, drinking, and the use of playing cards. The recall of such specific behavior allowed for the before-college and the after-graduation sequence in the question. The data from this question was used to determine the six-year pattern that developed around the college experience.

24. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in dancing.

TABLE 24

PARTICIPATION IN DANCING

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies (Before College)	58	28	15	7
Observed Frequencies (After College)	65	24	13	6

D.F.=3

X²=0.926

.05=7.815

The Chi Square of 0.926 was not significant at the .05 level of confidence. The alumni responses to before and after-college behavior

clearly demonstrated that no difference existed in the participation of dancing. The hypothesis was accepted.

25. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in smoking.

TABLE 25
PARTICIPATION IN SMOKING

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	96	6	5	1
Observed Frequencies	85	9	6	8
D.F.=3	X ² =4.819		.05=7.815	

The Chi Square of 4.819 was not significant at the .05 level of confidence. The hypothesis was accepted that no significant difference existed between the before-college and after-college participation in smoking. The high response percentage in the "never" category was noted.

26. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to actual participation in the use of alcohol.

TABLE 26
PARTICIPATION IN THE USE OF ALCOHOL

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	90	12	5	1
Observed Frequencies	49	23	25	11
D.F.=3	X ² =37.217		.05=7.815	

The Chi Square of 37.217 was significant at well beyond the .001 level of confidence. The after-college participation was substantially greater than was the before-college participation in the use of alcohol. The hypothesis was rejected.

27. There was no significant difference between the expected and the observed frequencies of Wheaton College graduates in regards to the actual participation in the use of playing cards.

TABLE 27

PARTICIPATION IN THE USE OF PLAYING CARDS

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	33	26	42	7
Observed Frequencies	37	20	38	13
D.F.=3	X ² =3.011		.05=7.815	

The Chi Square of 3.011 was not significant at the .05 level of confidence. The hypothesis was accepted that no significant difference existed between the before and after-college participation in the use of playing cards.

The precise breakdown of response to many of the questions on the Alumni Revised Senior Questionnaire has demonstrated a consistency which would specifically indicate that the same individuals were respondents for both instruments. Question eight was designed as a specific factual question which would have little chance of being misrepresented over a period of time. Question eight was used to verify the reliability of the student respondents on the 1969 Senior Questionnaire and on the Alumni Revised Questionnaire. If the responses to this very specific, precise

event would be reported with some degree of repetition on both instruments, we would have had more evidence that the same individuals were used in both questionnaires. The reliability on question eight would have provided additional strength to the accuracy of the other data included in this chapter.

TABLE 28

AT WHAT AGE DID YOU ACCEPT CHRIST AS SAVIOR?

Source	5 Years or Younger	6-12 Years	13-17 Years	18 + Years	Never
Expected Frequencies	16	57	25	4	6
Observed Frequencies	10	59	25	5	9

D.F.=4

 $\chi^2=1.257$

.05=9.488

With four degrees of freedom, the Chi Square of 1.257 was relatively low. It appeared from Table 28 that the cell analysis favorably demonstrated that very similar student populations were used to answer both questionnaires. The difference in the "5 years or below" cell and in the "never" cell possibly were related phenomena. It might have represented students who have questioned their faith in Jesus Christ and as a consequence have disavowed the validity of any commitment at the young accountability of below five years. One student who originally indicated a below five age of commitment to Christ wrote on the Alumni Questionnaire that he no longer believed. The rejection of a personal faith was more likely accomplished by some persons who questioned the understanding and original validity of the "five year old" responses. The Chi Square and the actual cell figures indicated a close correlation between the respondents for each instrument.

Discussion

The extremely low "t" scores, determined by comparing the mean senior dogmatism scores with the mean alumni dogmatism scores, have demonstrated the insignificant change which has taken place in the postgraduate adjustment to societal demands. The degree of open-mindedness as measured by Rokeach's Dogmatism Scale did not change substantially during the first two years of the postgraduate experience. Wheaton College alumni did not demonstrate significantly different dogmatism scores from their earlier college senior dogmatism scores.

However, it was interesting to observe that Tables 3, 4, 5, and 6 had suggested a slight trend in which the mean scores of the alumni were somewhat higher than the comparable senior mean scores. The mean dogmatism score for all male seniors was 147.85 while the mean postgraduate dogmatism score for all males was 149.26. A similar trend was evident in considering the male students who had attended Wheaton for four consecutive years. The nontransfer senior mean score was 145.34 while the mean postgraduate score for the same group was 147.16 (Table 5).

The largest numerical mean score difference was between the non-transfer female seniors and the postgraduate score of the same group. The senior mean female dogmatism score for nontransfer was 150.96 while the alumni mean score for the identical students was 155.26. The above mean score differences were not statistically significant, but it was interesting to note that all the postgraduate mean scores were larger.

It could be suggested that the adjustment to societal demands from a closely structured institution would have produced some entrenchment of positions and some self-preservation of ideas and belief systems. Nevertheless, the insignificance of the overall dogmatism change pattern has

followed closely the predicted outcome. Further evidence has been gathered that little change in dogmatism occurs after the college experience. This phenomena has been consistent even for students who came from a conservative, evangelical, Protestant background and who matriculated at a small, Christian-oriented school like Wheaton College. The belief structure, the life style, and the structured atmosphere at such an institution did not specifically alter the students' postgraduate acceptance and recognition of other people's right to a diverse belief system. In other words, the degree of open-mindedness was not specifically hindered by the unique college experience.

Some research has concluded that students from fundamental, Protestant backgrounds tended to be more dogmatic than other comparable student groups. The supposition from these findings has suggested that such students lacked the same relative potential to become significantly more open-minded during the college experience. It would have been almost impossible to compare student dogmatism scores from one region of the country to another. The time differential between test score comparison was an additional factor which tended to skew the results. Consequently, the subcultural, geographical, and time differentials could not have been sufficiently overcome to adequately compare Wheaton College students with students from more diverse backgrounds. However, the data from Tables 1 and 2 have provided some insight into the change and/or lack of change which took place from the freshman to senior years for students from conservative, Protestant backgrounds.

From the data in Tables 1 and 2, it was clear that Wheaton College students who entered that particular institution in 1965 became significantly more open-minded by their senior year, 1969. The male students had demonstrated more total mean score increase, but both sexes had mean

dogmatism score changes that were statistically significant at the .001 level of confidence. The difference indicated that Wheaton College had not impeded any change towards open-mindedness. In fact, a sufficient argument could be presented that Wheaton College had provided a setting in which students from narrow, conservative perspectives had become more tolerant and accepting of other belief systems. It was important to emphasize that a specific set of beliefs, an adherence to self-selected behavioral norms, and a structured life style had not limited the free expression of ideas and concepts which had contributed to the growth and development of open-mindedness.

It was quite possible that all college structures have little influence on the development of open-mindedness. The enablement to become more open-minded can be a reality within most college settings. The institution which hindered this growth would have been more unique than the specific institution which materially enhanced that growth experience. In other words, it would have taken a unique, peculiar institution to impede the potential development of open-mindedness. The evidence seemed to indicate that progressive growth in open-mindedness proceeded unimpeded in all educational settings unless it became hindered by some unusual set of circumstances.

The hypotheses from the Alumni Revised Senior Questionnaire were accepted in twenty out of twenty-one positional statements. The statements demonstrated that there was no significant difference between the responses by seniors and alumni to a series of attitude, value, and behavioral questions. The Chi Square was not significant at the .05 level of confidence in any of the twenty hypotheses that were accepted. However, that

data has revealed some interesting positional trends, and it reconfirmed the attitude, value, and behavioral framework held by the majority of Wheaton College graduates who attended school between 1965 and 1969.

Table 7 provided the basis for a positional statement that indicated a new clarity in recommending and/or not recommending Wheaton College as a desirable institution. The analysis of each answer cell revealed that the "probably recommend" category had a significant drop in responses while the "definitely recommend" and the "definitely not recommend" categories both increased. The alumni indicated that the postgraduate experience had helped to crystalize the personal preference in being able to analyze the relative merits of a Wheaton College education. It would stand to reason that the experience in postgraduate society should help clarify the strengths and weaknesses of the collegiate preparation.

Table 8 demonstrated that the opportunity to develop social competence was more favorably viewed by the alumni. Eleven responses shifted from the "poor" and "fair" categories to the "good" and "excellent" categories when the alumni-senior answers were compared. It appears probable that the postgraduate social experience proved to be less difficult to handle than was originally projected. The confidence in handling new social situations would positively reflect on the social experience provided at the undergraduate setting. It would seem that the Wheaton experience had been adequate in preparation for most new social situations. However, the dramatic shift away from the "poor" category was not correspondingly matched by an increase in the "excellent" category. The author would judge that additional social opportunities must still be designed to adequately meet the developmental social needs of Wheaton College graduates.

The alumni have recorded some conflicting trends which may neutralize any discernable direction in postgraduate religious patterns. Tables 10 and 11 have demonstrated a small tendency toward less interest in spiritual matters, missions, and evangelism. Tables 12, 13 and 14 have shown an alumni trend toward increased attendance for Sunday morning, Sunday evening, and Sunday school worship services. Both movements were relatively insignificant, and it would be safe to suggest that most indications have pointed to a persistent perpetuation of undergraduate religious behavior.

Even though Tables 14 and 15 have demonstrated increases in Sunday school and evening church attendance, it appeared to the author that factors other than specific attitudinal changes were responsible for these postgraduate increases. The collegiate life style and weekly time demands would have made it unlikely that the Christian college undergraduate would have attended Sunday school and Sunday evening services in a setting that did not have a strong home church association. The transient nature of the undergraduate living situation as against the relatively permanent living arrangements of many recent alumni should have accounted for some of the differential in religious service attendance patterns. Church attendance in a Christian college setting did not need to meet the interpersonal social needs in the same way as was true for the postgraduate setting. The alumni utilized church relationships to fellowship with other young people who were isolated from each other during the week. The social-fellowship experience with people who have similar beliefs and interests was a daily experience for the students attending a small, Christian-oriented college.

Tables 15, 16, 17, and 18 have illustrated how "faculty" and "other students" were perceived as increasing their sensitivity to the individual student when the alumni responses were compared with the senior scores. The

"student personnel deans" and the "administration" remained in the same relative position in the evaluation of their degree of student-oriented sensitivity. These trends helped to illustrate how the positive responses were increased with the postgraduate experience while the neutral and negative responses towards the "deans" and "administrators" remained basically the same. The movement on Table 16 concerning "other students" sensitivity was just shy of statistical significance. It was a positive reinforcement of the important role played by students to each other that may not have been duplicated in the postgraduate experience.

Table 19 dealing with the use of marijuana and Tables 20 and 23 concerning pre-marital sex and unmarried cohabitation have illustrated how the alumni responses were very similar to those expressed as seniors. The overwhelming majority continued to "strongly disagree" with these moral questions. Nevertheless, a small trend of increased response on the "moderately agree" answer was noted. The increase represented a relatively insignificant change. The alumni reconfirmed their strong convictions, and they demonstrated a persistency of moral standards on these issues.

The same persistence could be applied to the behavioral patterns continued by the alumni in the use of playing cards, in smoking, and in dancing. It was interesting to observe that the use of playing cards and the participation in dancing actually declined during the pre and post-college time period. The specific restrictions on playing cards and on dancing during the undergraduate days may have produced some social dysfunction. Consequently, the limited exposure and opportunity to interact in the unique social atmosphere of these two activities actually produced a regression in the ability to initiate oneself into the necessary social settings.

An interesting paradox in analyzing the data came when the responses to question nineteen (Table 21) were compared with the alumni responses to the behavioral question concerning the use of alcohol (Question 22, Table 26). Table 21 indicated that 102 alumni respondents either moderately or strongly disagreed with the question: "Because some of my acquaintances have adopted liberal attitudes towards sex, drugs, and alcohol, I feel some of my standards are out of date and I need to change them to keep up with the others." If it was assumed that the alcohol part of the question had equal weight with the other elements, it was somewhat difficult to understand how this strong negative response could be reconciled with the alumni response to the after-college use of alcohol. Table 26 demonstrated how the use of alcohol had changed from a limited pre-college pattern to a much more dominant post-college pattern. The number who occasionally used alcohol jumped from six to thirty-six. The number who never used alcohol decreased from ninety to forty-nine. The change in the use of alcohol as differentiated by the Chi Square Test was significant at the .001 level of confidence. The Chi Square value of 37.217 was three times beyond the necessary figure to be significant at the .001 level of confidence.

One possible explanation to the contradictory findings was that students were strongly opposed to attitudes and values being forced upon them because of peer or societal pressure. They specifically resisted any forced behavioral norm pattern that they did not personally agree with and endorse in actual practice. However, this did not imply that they might not have changed their behavioral patterns based upon personal preference and with thoughtful reexamination of their values. Consequently, the significant change in drinking patterns by the alumni possibly was a reflection of a deliberate behavioral response to the demands placed upon the college

graduate as he left the protective setting of his undergraduate experience. Whatever the reason, it became apparent that the restrictive response to the use of alcohol did not deter the alumni pattern. The particular dynamics involved in the increased alcoholic consumption remains an unknown factor that would warrant additional research.

Summary

The "t" test data from the senior mean dogmatism scores as compared with the alumni mean dogmatism scores have demonstrated that insignificant change had taken place in the postgraduate adjustment of Wheaton College alumni. The amount of open-mindedness as measured by Rokeach's Dogmatism Scale had not substantially changed during the first two years of the postgraduate experience. However, it was unmistakably clear that 143 Wheaton College students who entered the institution in 1965 became significantly more open-minded by their senior year, 1969. The male undergraduates demonstrated more specific growth, but both sexes had mean dogmatism score changes that were statistically significant at the .001 level of confidence.

The comparative results were analyzed for the twenty-one hypotheses that were generated from the Alumni Revised Senior Questionnaire. Twenty hypotheses were accepted when the Chi Square data demonstrated no significant difference between the senior and alumni responses to a series of attitude, value, and behavioral questions. Table 26 illustrated the data which resulted in the one hypothesis that was rejected. The use of alcohol changed from a limited pre-college pattern to a much more dominant post-college pattern. This pre to post-college pattern change in the use of alcohol was significantly differentiated by the Chi Square Test at the .001 level of confidence. In fact, the Chi Square value of 37.217 was three

times beyond the necessary figure to be at the .001 level of significance.

The decisive change in drinking patterns by the alumni may reflect a deliberate behavioral response to the pressures placed upon the Christian college graduate as he faces societal demands. Whatever the reason, the particular dynamics involved in the increased alcoholic consumption remains a specific question that would warrant additional research.

The overall results from the two instruments used in this longitudinal research would support the position that college graduates from conservative, evangelical, Protestant backgrounds tend to perpetuate the behavioral, attitudinal, and value positions that they developed as undergraduates. The same persistence was noted in the substantial continuity of open-mindedness that was illustrated by a comparative analysis of senior-alumni dogmatism scores.

CHAPTER V

SUMMARY

The Need

The final chapter presents a synthesized overview of the reported research. The conclusions and interpretations are summarized to provide a comparative analysis with the related research discussed in chapter two. One purpose in evaluating the findings was to suggest some additional research parameters for exploration in the immediate future. The limitations of this particular study were discussed to structure some guidelines to increase the reliability and validity of future research.

The depth and persistence of attitude and value change as produced by the college experience had not been adequately researched. The changed attitudes and values held by students when they graduated from most colleges had persisted in direct relationship to the degree of support they had found for these new attitudes and values in their post-college environments. The majority of changes had persisted because few students came in contact with new influences strong enough to cause some reconsiderations. However, the small, Christian-oriented college with its unique structure had graduates who were faced with a society that challenged the stability of these college-induced changes. Consequently, the framework of unique value change opportunities along with the particular problems in sustaining these changes had stimulated the need to provide research answers to the persistence of value change and the directional trends of dogmatism for graduates of the small, Christian-oriented college.

The Purpose

Wheaton College in Wheaton, Illinois, represents a cross section of conservative, evangelical Protestant churches in the United States. This subculture emerged from a protected fundamentalistic tradition. The students who attend Wheaton are asked to adhere to a rigid standard of behavioral norms and a prescribed set of values.

The purpose of this dissertation was to study the longitudinal impact of a small, Christian-oriented liberal arts college on the dogmatism, values, attitudes, and behavior of its graduates. The major focus was on the change and/or lack of change which took place within the first two years following the college experience.

One specific goal was to analyze the adjustments which took place on the open-minded/closed-minded continuum of the Rokeach Dogmatism Scale-Form E. The scores and change factors were compared between the college years and the postgraduate years. A second specific goal was to distinguish the post-college changes in values, attitudes, and self-reported behavior from a retest of the 1969 Wheaton College Senior Questionnaire.

The study has offered some research data concerning changes which took place after graduation from a well-structured, conservative life style and during the initial period of adjustment to the postgraduate demands of the larger society. The research findings should have significant implications for small, Christian-oriented colleges in evaluating the persistence of college-induced value change.

Major Hypotheses

There are very few longitudinal studies which have compared values, attitudes, behavior, and dogmatism so that the same students were tested as college students and retested as alumni. Consequently, the two major

hypotheses were stated in the null form since the lack of consistent data prevented a clear directional prediction pattern.

Hypothesis I

There was no significant difference between the dogmatism scores of Wheaton College students who were tested as seniors and the dogmatism scores of the same students nineteen months after graduation.

Hypothesis II

There was no significant difference between the value, attitude, and behavioral responses of Wheaton College senior students and the responses of the same students nineteen months after graduation on the 1969 Wheaton College Senior Questionnaire.

Conclusions from Related Research

The impact of college on attitude and value development has been illustrated in the historical review of the related literature. One general conclusion was that freshman to senior changes have occurred with consistent uniformity between 1936 and 1970. The early studies concentrated on political and social attitude changes between the freshman and senior years, while the later research demonstrated the predominant changes that transpired in authoritarianism, dogmatism, ethnocentrism, intolerance, and social maturity. Statistically significant changes had taken place in most attitude and value areas as reported in the literature.

A second overall conclusion from the literature was that attitudes developed in college continued to persist after graduation. The college-experienced changes in political, social, economic, and religious attitudes were generally in the liberal direction. Bugelski and Lester; Nelson; Bender; and Newcomb presented studies which showed the persistence of these new

liberal attitudes after graduation. There was no instance in which the mean scores of these new attitudes were reversed in a statistically significant manner.

The historical review of college alumni research demonstrated that inadequate attention had been given to the persistence of college-obtained attitudes. The previously mentioned studies represented most of the major research efforts. Despite the "Vassar Alumni Studies" which attempted to determine postgraduate changes in personality characteristics, the entire area of dogmatism, prejudice, tolerance, authoritarianism, and social maturity has been neglected in alumni research.

Description of Wheaton College

The Carnegie Corporation asked Dr. Morris Keeton, academic vice president of Antioch College, and Dr. Conrad Hilberry, professor of English at Kalamazoo College, to conduct a study on the future threats that would challenge the very survival of private college education. Twelve private colleges were selected to be representative of a total perspective in private higher education. Research teams were sent to each campus to observe during the 1965-1966 school year. Wheaton College was selected to represent the conservative, Protestant religious position. The detailed description of Wheaton College was taken from the profile as described in the book Struggle and Promise: A Future for Colleges.

Wheaton College has not restricted the doctrinal positions of its students, but the admissions procedure has required an acknowledged profession of faith in Jesus Christ. Furthermore, the conduct of the students was restricted by the annual signing of the "pledge." This was an agreement to refrain from "gambling, dancing, attendance at the theaters, the use of playing cards, alcoholic liquors, tobacco and membership in secret societies."

These behavioral restrictions applied equally to faculty, administration, and students. The college did not place these restrictions as scriptural directives, but as specific mores that obviously created a student body and a campus atmosphere that was distinct from the other representative profile colleges.

Research Sample--Instrumentation

The Department of Institutional Research at Wheaton College conducted a senior questionnaire for the graduating class of 1969. The attempt was made to elicit data in a manner which would allow for acceptable inferences and generalizations to be made concerning the findings. The data gathering, therefore, was accomplished by a stratified random sample. To insure a representative sample of all students, approximately 25 per cent of the senior class was selected. Senior seminars were randomly selected from each of the major academic divisions. A time was arranged for the completion of the questionnaire with each departmental seminar. All seniors attending the seminar on the selected date were asked to complete the questionnaire before leaving the class. The date chosen for the classroom data collection was unannounced so that some specific attempt could be made to eliminate the selective response bias that generally was associated with such a personalized attitude and value instrument.

It had been the practice of Wheaton College to query its seniors about various aspects of their educational experience. Traditionally, the Senior Questionnaire attempted to elicit information about the students' academic and social/attitudinal development. The 1969 Senior Questionnaire was a departure from this traditional approach. The academic area was not included in the 1969 instrument and greater effort was made to ascertain the value, attitude, and behavioral framework of Wheaton College seniors.

The newly designed questions and the repeat questions were selected after a pilot study had been conducted with fifty students to determine instrument validity.

The 1969 Senior Questionnaire had thirty-one objective questions and five open-ended questions. The alumni revision was scaled down to twenty-two objective questions and the open-ended questions were eliminated because of the extreme difficulty in providing an accurate answer evaluation. The alumni revised instrument remained consistent with the wording of the 1969 instrument although the grammatical structure had been altered to accommodate the alumni status of the respondents.

The Alumni Revised Senior Questionnaire was sent to 150 new alumni from the 1969 graduating class. One hundred and thirty usable questionnaires were returned for a sample recovery of 87 per cent. The usable data from the original 1969 Senior Questionnaire contained 108 completed instruments. Consequently, the same number of completed student questionnaires was necessary from the alumni form in order to use the Chi Square Test, which demanded an equal N. Therefore, it became necessary to randomly select out twenty-two additional instruments from the alumni return total of 130. A table of random numbers was used to determine which instruments were expendable. The analyses from the 1969 Senior Questionnaire and the Alumni Revised Questionnaire were based upon an equal N of 108 for both the expected and observed frequencies.

The major questions provided the opportunity to analyze self-reported behavioral patterns over a period of time. It was assumed that the change and/or lack of change in self-reported attitudes, values, and behavior could be a reflection of the collegiate and societal press encountered by this college/alumni population. The question was asked as to the degree in which

attitudes, values, and behavior change according to the specific demands of each unique press.

Dr. Milton Rokeach questioned the necessity of placing authoritarianism within a political, historical framework that had right and left definitions. He proposed that a more theoretical ahistorical analysis of the properties held in common by all forms of authoritarianism regardless of specific ideological, theological, philosophic or scientific content should be pursued. His main concern in the reformulation process was to make a clear distinction between the structure of the ideological system and the specific content. Rokeach set out to differentiate the formal, structural properties of belief system from any specific content. In other words, he was more interested in how a person believed than in what he believed. It was his goal to define the open-minded/closed-minded properties irregardless of individual positions within a political framework. The Rokeach Dogmatism Scale was the instrumentation that resulted from this effort to understand the unique degree in which a person would hold to his particular belief, attitude, and political position. It provided a systematic basis for theory building which transcended specific content.

The discussion on the instrumentation of this research included a significant analysis of Rokeach's Dogmatism Scale-Form E. The survey of recent research established the Dogmatism Scale as a concept of general authoritarianism in direct contrast to the right authoritarianism of the California F Scale. The Dogmatism Scale demonstrated its emphasis on belief structure rather than on specific ideological content. The analysis of construct validity concluded that the Dogmatism Scale appeared to be free from a leftist scale bias.

The discussion on the reliability and validity included the research that provided a factor analysis of the Dogmatism Scale. Even though there were some disagreements between Rokeach's conceptualizations and the differentiated factors, the Dogmatism Scale had sufficient validity to build a sound empirical foundation.

The data to study graduate patterns on the open-minded/closed-minded continuum were collected by a retest of the Rokeach Dogmatism Scale-Form E. One hundred and five alumni from the 1969 graduating class were identified as a representative sample of the 269 students who had taken this instrument while attending their senior year at Wheaton College. The graduate sample was representative of all major academic divisions. The Dogmatism Scale-Form E had a 91 per cent sample return with ninety-six instruments being received from the 105 students who were identified for this research sample. Forty-six men and fifty women dogmatism scores were available for the statistical analysis of senior to postgraduate changes on the open-minded/closed-minded continuum.

The random, stratified selection process was identical to the one utilized in the senior questionnaire. Academic senior seminars were randomly selected from each major academic division. This process allowed each senior student who had taken the Dogmatism Scale to be eligible for the final alumni sample. When a seminar had been selected from each academic division, the enrollment roster was studied in order to identify the seniors who had taken the Dogmatism Scale.

Data Analysis

The questions from the 1969 Senior Questionnaire that were repeated on the revised alumni questionnaire were statistically analyzed by the Chi Square Tests for significance of difference. The Chi Square Tests were used

because the data on the instruments were discreet as expressed in frequencies and categories. The actual Chi Square was calculated by comparing the sum of an expected frequency for a specified category with the sum of the observed frequency for the same specific category. The a priori hypotheses were used because the data from the 1969 Senior Questionnaire represented the research which provided the expected frequency for each category, on each question for the revised alumni questionnaire. The observed frequency was the actual response to each category, and each question as given by the alumni group.

The level of statistical significance was similar to the Dogmatism Scale procedure in that the .05 level of significance was considered the minimum level of probability needed to provide a decision on the acceptability of the data.

The expected frequencies in the null hypothesis represented the anticipated answers that would be given on the retest alumni questionnaire as a result of building expectations based upon the responses to the questions or categories of the 1969 Senior Questionnaire. The observed frequencies in the null hypothesis represented the actual responses given on the revised alumni questionnaire. The differences between the expected and the observed responses provided the statistical framework in which the data was analyzed.

The data from the senior year dogmatism scales and the revised alumni dogmatism scales were analyzed by "t" tests to determine any significant differences. The "t" test was used for the Dogmatism Scale because it measured data which was quantitatively expressed in a continuous fashion.

The research employed the null form of the hypothesis because the Dogmatism Scale data was used to test the reliability of a difference between means. The null form was a simple, convenient method to state that there was no true difference between the compared means. The probability level was

arbitrarily set at the .05 level of significance. It would be with considerable confidence that data which demonstrated a .05 level of statistical significance had mean differences not due to change or statistical accidents but to actual differences in the data.

Findings

The author performed the "t" test on the group means of 143 freshmen and repeated senior dogmatism scores to provide some base line comparison for any postgraduate dogmatism score changes. The freshman dogmatism scores were obtained in 1965, and the repeated senior dogmatism scores were gathered in 1969 from the identical students. Sixty-eight women and seventy-five men scores were usable in this longitudinal freshman to senior study of college dogmatism score changes.

The following tables (1 and 2) demonstrated that dogmatism scores changed from the freshman to senior year at this Christian-oriented, liberal arts college even though the students came from conservative evangelical Protestant backgrounds. The men and women students became significantly more open-minded during their college experience. The mean score changes were statistically significant at the .001 level of confidence for both men and women.

TABLE 1

WOMEN DOGMATISM SCORES

Source	Year	N	Mean	S.D.	t
Freshmen	1965	68	162.35	23.75	3.99*
Seniors	1969	68	145.65	25.04	

*Significant at the .001 level of confidence.

TABLE 2

MEN DOGMATISM SCORES

Source	Year	N	Mean	S.D.	t
Freshmen	1965	75	162.11	18.31	5.51*
Seniors	1969	75	143.75	22.33	

*Significant at the .001 level of confidence.

Some research has concluded that students from fundamental, Protestant backgrounds tended to be more dogmatic than other comparable student groups. The supposition from these findings suggested that such students lacked the same relative potential to become significantly more open-minded during the college experience. It is almost impossible to compare student dogmatism scores from one region of the country to another. The time differential between test score comparison is an additional factor which tends to skew the results. Consequently, the subcultural, geographical, and time differentials could not be sufficiently overcome to compare adequately Wheaton College students with students from more diverse backgrounds. However, the data from Tables 1 and 2 have provided some specific insight into change and/or lack of change which took place from the freshman to senior years for the students from conservative, Protestant backgrounds.

From the data in Tables 1 and 2, it was evident that Wheaton College students who entered the institution in 1965 became significantly more open-minded by their senior year, 1969. The male students demonstrated more total mean score increase, but both sexes had mean dogmatism score changes that were statistically significant at the .001 level of confidence. The change was dramatic and indicated that Wheaton College had not impeded any

change towards open-mindedness. In fact, a sufficient argument could be presented that Wheaton College had provided a setting in which students from narrow, conservative perspectives had become more tolerant and accepting of other belief systems. It was important to emphasize that a specific set of beliefs, an adherence to self-selected behavioral norms, and a structured life style had not limited the free expression of ideas and concepts which had contributed to the growth and development of open-mindedness.

It could be suggested that the adjustment to societal demands from a closely structured institution would produce some entrenchment of positions and some self-preservation of ideas and belief systems. Nevertheless, the insignificance of the postgraduate dogmatism change pattern has closely followed the predicted outcome. Further evidence has been gathered that little change in dogmatism occurs after the college experience. This phenomena has been consistent even for students who came from a conservative, evangelical Protestant background and who matriculated at a small, Christian-oriented school like Wheaton College. The belief structure, the life style, and the structured atmosphere at such an institution did not specifically alter the students' postgraduate acceptance and recognition of other people's right to a diverse belief system. In other words, the degree of open-mindedness was not specifically hindered by the unique college experience.

TABLE 3

MALE DOGMATISM SCORES

Source	N	Mean	S.D.	t
Senior Scores	46	147.85	24.03	0.27
Postgraduate Scores	46	149.26	25.54	

TABLE 4

FEMALE DOGMATISM SCORES

Source	N	Mean	S.D.	t
Senior Scores	50	156.82	24.46	0.03
Postgraduate Scores	50	156.96	26.75	

Table 19 dealing with the use of marijuana and Tables 20 and 23 concerning pre-marital sex and unmarried cohabitation have illustrated how the alumni responses were very similar to those expressed as seniors. The overwhelming majority continued to "strongly disagree" with these moral questions. Nevertheless, a small trend of increased response on the "moderately agree" answer was noted. The increase represented a relatively insignificant change. The alumni reconfirmed their strong convictions, and they demonstrated a persistency of moral standards on these issues.

TABLE 19

OCCASIONAL USE OF MARIJUANA

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	3	9	18	78
Observed Frequencies	3	17	19	69

D.F.=3

X²=2.487

.05=7.815

TABLE 20

UNMARRIED COHABITATION WITH MEMBER OF OPPOSITE SEX

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	1	6	13	88
Observed Frequencies	2	9	16	81
D.F.=3	X ² =0.618		.05=7.815	

TABLE 23

PRE-MARITAL SEXUAL INTERCOURSE FOR EARLY MARITAL ADJUSTMENT

Source	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree
Expected Frequencies	2	3	21	82
Observed Frequencies	1	12	22	73
D.F.=3	X ² =4.680		.05=7.815	

The alumni indicated that the postgraduate experience had helped to crystalize the personal preference in being able to analyze the relative merits of a Wheaton College education. It would stand to reason that the experience in postgraduate society should help to clarify the strengths and weaknesses of the collegiate preparation. (See Table 7 for an example of this crystalization.)

TABLE 7

RECOMMENDING ATTENDANCE AT WHEATON COLLEGE

Source	Defi- nitely	Prob- ably	Neutral	Prob- ably Not	Defi- nitely Not
Expected Frequencies (1969 Responses)	20	62	19	6	1
Observed Frequencies (1971 Responses)	31	41	22	9	5
D.F.=4	X ² =7.709		.05=9.488		

The overall results from the two instruments used in this longitudinal research would support the position that college graduates from conservative, evangelical, Protestant backgrounds tended to perpetuate the behavioral, attitudinal, and value positions that they developed as undergraduates. The same persistence was noted in the substantial continuity of open-mindedness that was illustrated by a comparative analysis of senior-alumni dogmatism scores.

Conclusions

Comparison with Previous Research

The research finding that Wheaton College male and female students became significantly more open-minded (at the .001 level of confidence) between their freshman and senior years was comparable with the research documentation provided in chapter two. The Santa Clara study by Foster, Stanek, and Krossowski; the Lehmann and Dressel studies (1962-1963) at Michigan State University; the San Jose State studies (two and four years) by Walter Plant; and the comprehensive institutional self-study by Mundelein College were all in general agreement with the results of this study.

Rokeach's Dogmatism Scale-Form E was used to evaluate the longitudinal change which occurred in each of the previously mentioned research projects. In every case, the upperclass and/or senior students were significantly more open-minded than they were as freshmen. The experienced dogmatism change between 1965 to 1969 by the identical Wheaton College students added additional strength to the evidence that students became more open-minded in a variety of educational institutions. The Wheaton results established the fact that students from fundamental, conservative, Protestant backgrounds could become significantly more open-minded even when they attended a unique, Christian-oriented college.

In chapter two, the research findings have illustrated how the shift to open-mindedness was on a descending curve from the freshman to senior years. Junior and senior students have demonstrated much less change in comparison to their dramatic, initial adjustments as freshmen and sophomores. The research evidence has clearly suggested that dogmatism was not likely to change after the college years.

The specific alumni research as reported in chapter four has confirmed the anticipated findings that no postgraduate change in dogmatism would be experienced. The Wheaton College alumni did not significantly change in mean dogmatism scores between their senior year test and their alumni retest. The evidence illustrated how dogmatism change was more closely associated with the college-aged individual and in particular with the college-attending young person's developmental growth than it was to the individual's specific adjustments to the unique atmosphere of the collegiate experience. In a similar fashion, the pressures inherent within the postgraduate atmosphere and its resulting behavioral influences would not

significantly affect any growth on the open-minded/closed-minded continuum because the developmental phase of dogmatism has been completed during the undergraduate experience.

The research findings from the Alumni Revised Senior Questionnaire illustrated how the persistence and stability of attitude, value, and behavioral positions were maintained by Wheaton College alumni. The analyzed data from chapter four demonstrated a relative similarity between the senior and alumni patterned responses to this particular instrument. The twenty accepted hypotheses all demonstrated no significant differences between the expected senior responses and the observed alumni responses to the attitude, value, and behavior questions. The one rejected hypothesis was unique in that the significant response change was related to data which covered a six-year time sequence from pre- to post-college behavioral patterns.

The research presented in chapter two was in overwhelming agreement with these findings. Bugelski and Lester studied a college population that had acquired greater degrees of liberality. A three-year alumni retest to this population concluded that a majority of these college graduates had maintained their acquired liberal attitudes. Nelson measured alumni persistence fourteen years after he had originally surveyed conservative-liberal attitudes on eighteen college campuses. He categorically stated that the original attitudes had been maintained fourteen years after graduation. The Vassar College alumni research by Freedman covered many decades of student attitudes. The findings concurred that senior attitudes, even when conditioned by specific national and international events, continued to persist many years after the college experience. Newcomb's alumni studies reported that relative attitude positions were held among college graduates for many years. The senior students who were relatively conservative in 1938-1940

were relatively conservative in alumni retests of 1960. Changes which had taken place during the college experience were maintained twenty-five years later.

The graduates from Wheaton College continued to operate within an attitude, value, and behavior framework that was solidified by their senior year in college. The Wheaton students continued to maintain a life style that was considerably different from other college graduates. However, the persistence and stability factor was very consistent with the graduates from many diverse educational settings. The students' beliefs and life styles might have been on opposite ends of a continuum, but the continued persistence of senior standards was a uniform phenomena among diverse alumni groups.

Implications for Wheaton College

The following four tables were generated by question twenty-two from the Revised Alumni Senior Questionnaire. The question related to student participation in dancing, smoking, drinking, and the use of playing cards. The prohibition of these specific behavioral areas reflected the standards of conduct agreed to by all Wheaton College students. Tables 24, 25, 26, and 27 provided data which included a six-year behavioral pattern. The before-college behavior was noted by the expected frequencies category and the after-college behavior was reflected in the observed frequencies category.

TABLE 24
PARTICIPATION IN DANCING

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	58	28	15	7
Observed Frequencies	65	24	13	6
D.F.=3	X ² =0.926		.05=7.815	

TABLE 25

PARTICIPATION IN SMOKING

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	96	6	5	1
Observed Frequencies	85	9	6	8
D.F.=3	X ² =4.819		.05=7.815	

TABLE 26

PARTICIPATION IN THE USE OF ALCOHOL

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	90	12	5	1
Observed Frequencies	49	23	25	11
D.F.=3	X ² =37.217		.05=7.815	

TABLE 27

PARTICIPATION IN THE USE OF PLAYING CARDS

Source	Never	Rarely	Occasionally	Regularly
Expected Frequencies	33	26	42	7
Observed Frequencies	37	20	38	13
D.F.=3	X ² =3.011		.05=7.815	

The findings from these four tables illustrated how the college experience had limited influence on the postgraduate patterns of behavior. The data from Tables 24, 25, and 27 demonstrated how the college experience

had not changed behavior. The prohibition of card playing, dancing, and drinking had not altered the relative positions concerning these activities from pre-college to post-college experiences.

The comparative results were analyzed for the twenty-one hypotheses that were generated from the Alumni Revised Senior Questionnaire. Twenty hypotheses were accepted when the Chi Square data demonstrated no significant difference between the senior and alumni responses to a series of attitude, value, and behavioral questions. Table 26 illustrated the data which resulted in the one hypothesis that was rejected. The use of alcohol changed from a limited pre-college pattern to a much more dominant post-college pattern. This pre- to post-college pattern change in the use of alcohol was significantly differentiated by the Chi Square Test at the .001 level of confidence. In fact, the Chi Square value of 37.217 was three times beyond the necessary figure to be at the .001 level of significance.

Table 26 crystalized the lack of positive influence that the college experience had in shaping behavioral norms. The question to be asked was: What factors contributed to the value development of the student population if the specific behavioral control exhibited at Wheaton College had limited influence on the positive expression of postgraduate behavior?

Austin (1968) and Chickering (1971) designed and conducted research studies which indicated that colleges have little or no effect on the success of their graduates. The evidence appeared to support the concept that the quality and success of alumni was highly correlated with the quality of freshmen admitted to any particular school. These findings supported the supposition that academic success was not related to what a college had to offer students but to the ability possessed by the entering freshmen. Large expenditures per student and high ratios of Ph.D. faculty was not correlated

with the future success of college graduates. If the academic potential of the entering freshman was directly correlated with success in later life, then the quality of the college graduate was dependent upon the college's original recruitment process. The college product was directly related to the natural resources that were available in the beginning of the educational process.

The evidence from this dissertation provided questions as to what influence the small, Christian-oriented college had upon behavioral development. It appeared that Wheaton College had little influence in the desired direction of abstinence from card playing, dancing, and smoking. The significant data from Table 26 could have suggested that the Christian college experience was contributing a negative influence on the culturally-oriented question of alcoholic consumption. If the Christian college community had no influence on the development of behavior that reflected a desired value system, it would be imperative that less emphasis be placed on structured behavioral directives.

The acceptance of this reasoning would demand a new emphasis on the admissions program of the Christian college. The recruitment procedure must become an important operation of highest priority if a desired college graduate was to be used for representation of institutional objectives. The selection and recruitment of students should become a consuming preoccupation of all administrative personnel. It appeared that the intake of student resources would ultimately play the major role in determining whether Wheaton College would meet its desired goal.

The evidence from this research suggested that attitudes, values, and behavior of most students was determined more by the quality of these characteristics already possessed by the recruited freshman than by change

which took place in college. What a student brings to the Christian college may be more important to the eventual evaluation of the college graduates than the values, attitudes, and behavior developed during the college experience. The admission process may be the most important variable to Wheaton College's desire to continue as a Christian college.

Suggestions for Future Research

Research should be initiated to provide a comparative analysis of Christian-oriented and secular educational institutions. A pressing problem that came into focus was the need to evaluate the impact of diverse college settings on the attitudes, values, and behavioral patterns of students from conservative, evangelical, Protestant backgrounds.

A longitudinal research design should be constructed to analyze the value development of conservative students who would concurrently attend Christian-oriented and secular institutions. The research comparison would provide necessary data for a careful analysis of students from similar backgrounds who attended very different educational institutions. If the value development of a conservative student attending a secular university was more positive than the value development of a conservative student attending a religious school, it would be difficult to provide sufficient justification for the continued existence of the value-oriented Christian college. However, the reverse findings would be an encouragement for continuing this type of higher education.

The research data in chapter four revealed that the use of alcohol had a dramatic increase from the pre- to post-college experience. Research should be initiated to study the dynamics behind this significant finding. The actual behavioral change was important to observe, but the reason behind the altered behavior pattern would be more valuable.

A final research suggestion would be to continue the longitudinal study on dogmatism. Specifically, the 147 Wheaton students who attended the college for all four years should be retested five years after graduation. A follow up on these students would provide an additional bit of evidence to confirm the theory that student dogmatism scores will not significantly change after graduation. The follow-up research would supply the final research data on postgraduate dogmatism change for students attending a value-oriented college.

Limitations of the Study

The most serious limitation for this study was the lack of depth involved in attempting to research such a broad spectrum as included in attitudes, values, behavior, and dogmatism. The standardized Rokeach Dogmatism Scale could have been a focal point for additional instruments which would have provided data on tolerance, social maturity, authoritarianism, and closely related behavioral factors. The study of dogmatism could have correlated with comparative data from academic and personality instruments. The breadth of the research design prevented some more in-depth analysis of dogmatism.

The use of the Wheaton College Senior Questionnaire was a valuable tool in gathering data on attitudes, values, and behavior. However, the instrument was too uniquely tailored to that institution for comparative analysis and/or a replicated study by another institution. The questionnaire provided some insight into Wheaton College, but it covered so many areas that necessary depth in any one area was greatly sacrificed.

The statistical analysis was acceptable but limited in its scope of interpretation. The "t" test and Chi Square test provided general directional interpretations, but they were so broadly designed that specific influences

and factors were not clearly isolated. The statistical analysis would have been more inadequate if additional hypotheses had been rejected. The type I statistical error (that is, rejecting the null hypothesis when it is actually true) could have provided confusing theory and opened up a false line of theory and action. Repeated rejections of the null hypotheses would have necessitated additional statistical sophistication in providing rationale for these decisions.

A final weak factor in this research was the limited postgraduate experience that had transpired before the alumni retests. It would have been more acceptable if the postgraduate experience could have been extended from nineteen months to at least three years. The additional time would have presented more permanent family, social, and occupational settings in which the full impact of society might have more fully influenced the results of the research.

APPENDIX A

Senior Questionnaire--1969

This instrument is a retest of the Wheaton College Senior Questionnaire which was given to a sample of 121 seniors who were randomly selected from pro-seminar classes. The purpose is to analyze the changes which have taken place in behavior and values since college graduation. The number of questions has been reduced and the grammatical structure has been altered to accommodate your alumni status.

The anonymity of your response will be protected.

Please indicate:
() Male () Female

Major Field of Study _____

Please circle the answer that best describes your response to the item.

1. What is your present marital status?
 1. Not dating anyone regularly
 2. Dating same person regularly
 3. Engaged
 4. Married
2. To what extent was the Student Personnel Office helpful in assisting you in your choice of postgraduate plans?
 1. Helped greatly
 2. Helped considerably
 3. Somewhat helpful
 4. Very little or no help
 5. Not applicable
3. During your stay at Wheaton your vocational objectives
 1. Were strengthened
 2. Remained unchanged
 3. Were quite radically changed
 4. Were never clarified
4. If a friend of yours were planning to attend college, how would you recommend Wheaton?
 1. Definitely recommend
 2. Probably recommend
 3. Not make any recommendation (neutral)
 4. Probably not recommend
 5. Definitely not recommend

5. How would you evaluate opportunities at Wheaton for the development of social competence?
 1. Excellent
 2. Good
 3. Fair
 4. Poor
6. To what extent did your Wheaton education help you integrate all areas of life into a meaningful, Christ-centered pattern?
 1. Helped very much
 2. Helped
 3. Neither helped nor hindered
 4. Hindered
7. While at Wheaton did your interest in spiritual matters
 1. Greatly increase
 2. Increase
 3. Remain about the same
 4. Decline
8. At approximately what age did you accept Christ as Savior? (Leave blank if there is any question as to whether or not you have accepted Christ as Savior.)
 1. 5 years or younger
 2. 6 to 12 years
 3. 13 to 17 years
 4. 18 years or older
9. While at Wheaton did your interest in missions--the need to share Christ's message to all cultures, ethnic groups, and nations--
 1. Greatly increase
 2. Somewhat increase
 3. Remain about the same
 4. Decline
 5. Could care less
10. To what extent have you (when not engaged in service yourself) attended Sunday morning church services since graduation?
 1. Regularly
 2. Quite frequently
 3. Occasionally
 4. Rarely

11. To what extent have you (when not engaged in service yourself) attended Sunday evening church services since graduation?
 1. Regularly
 2. Quite frequently
 3. Occasionally
 4. Rarely
12. To what extent have you (when not engaged in service yourself) attended Sunday school since graduation?
 1. Regularly
 2. Quite frequently
 3. Occasionally
 4. Rarely
13. Which of the following represented (described) the faculty's sensitivity to you as an individual?
 1. Very sensitive
 2. Somewhat sensitive
 3. Rarely sensitive
 4. Insensitive
14. Which of the following represented other students' sensitivity to you as an individual?
 1. Very sensitive
 2. Somewhat sensitive
 3. Rarely sensitive
 4. Insensitive
15. Which of the following represented the administration's sensitivity to you as an individual?
 1. Very sensitive
 2. Somewhat sensitive
 3. Rarely sensitive
 4. Insensitive
16. Which of the following best represented the student personnel deans' sensitivity to you as an individual?
 1. Very sensitive
 2. Somewhat sensitive
 3. Rarely sensitive
 4. Insensitive

17. Assuming marijuana is non-habit forming and has less harmful side effects than LSD, I would consider using it occasionally.
1. Strongly agree
 2. Moderately agree
 3. Moderately disagree
 4. Strongly disagree
18. I feel that with the aid of the "pill" couples should be able to live (unmarried) together, without having children, and easily dissolve the union if one or the other gets bored with it.
1. Strongly agree
 2. Moderately agree
 3. Moderately disagree
 4. Strongly disagree
19. Because some of my acquaintances have adopted liberal attitudes toward sex, drugs, and alcohol, I feel some of my standards are out of date and I need to change them to keep up with others.
1. Strongly agree
 2. Moderately agree
 3. Moderately disagree
 4. Strongly disagree
20. In a dating relationship, it is the woman's role to determine how intimate the relationship should be.
1. Strongly agree
 2. Moderately agree
 3. Moderately disagree
 4. Strongly disagree
21. Sexual intercourse before marriage is an important experience for early marital adjustment.
1. Strongly agree
 2. Moderately agree
 3. Moderately disagree
 4. Strongly disagree
22. Please indicate the extent of your participation in each of the activities listed

<u>BEFORE COMING TO WHEATON</u>	Never	Rarely	Occasionally	Regularly
Danced	()	()	()	()
Smoked	()	()	()	()
Drank	()	()	()	()
Used "playing cards"	()	()	()	()

	Never	Rarely	Occasionally	Regularly
<u>WHILE AT WHEATON (excludes vacations):</u>				
Danced	()	()	()	()
Smoked	()	()	()	()
Drank	()	()	()	()
Used "playing cards"	()	()	()	()

ACTUAL PARTICIPATION AFTER GRADUATION:

Dancing	()	()	()	()
Smoking	()	()	()	()
Drinking	()	()	()	()
Using "playing cards"	()	()	()	()

Did you fill out the full senior questionnaire in the spring semester of 1969? Yes _____ No _____

Current telephone number _____.

Cooperative Study of Attitudes and Values*

The following is a study of what the general public thinks about a number of important social and personal questions. The best answer to the statements below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others. Whether you agree or disagree with any statement, you can be sure that many other people feel the same way you do.

In the blank column to the left of each statement, mark each statement according to how much you agree or disagree with it according to the following key:

- | | |
|--------------------------|----------------------------|
| Key: 1. I agree a little | 4. I disagree a little |
| 2. I agree on the whole | 5. I disagree on the whole |
| 3. I agree very much | 6. I disagree very much |

Please mark every one.

Example: College students should not be allowed to drive cars on campus.
If you AGREE A LITTLE, you would write in a "1" in the blank at the left:

1 College students should not be allowed to drive cars on campus.

1. The United States and Russia have just about nothing in common.
2. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
4. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.
5. Man on his own is a helpless and miserable creature.
6. Fundamentally, the world we live in is a pretty lonesome place.
7. Most people just don't give a "damn" for others.
8. I'd like it if I could find someone who would tell me how to solve my personal problems.
9. It is only natural for a person to be rather fearful of the future.
10. There is so much to be done and so little time to do it in.
11. Once I get wound up in a heated discussion, I just can't stop.
12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
13. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.
14. It is better to be a dead hero than to be a live coward.
15. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.
16. The main thing in life is for a person to want to do something important.
17. If given the chance, I would do something of great benefit to the world.
18. In the history of mankind there have probably been just a handful of really great thinkers.
19. There are a number of people I have come to hate because of the things they stand for.
20. A man who does not believe in some great cause has not really lived.

21. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.
22. Of all the different philosophies which exist in this world there is probably only one which is correct.
23. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.
24. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
25. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
26. In times like these, a person must be pretty selfish if he considers primarily his own happiness.
27. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.
28. In times like these, it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.
29. A group which tolerates too much differences of opinion among its own members cannot exist for long.
30. There are two kinds of people in this world: those who are for the truth and those who are against the truth.
31. My blood boils whenever a person stubbornly refuses to admit he's wrong.
32. A person who thinks primarily of his own happiness is beneath contempt.
33. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
34. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.
35. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.
36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
37. The present is all too often full of unhappiness. It is only the future that counts.
38. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
39. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.
40. Most people just don't know what's good for them.

APPENDIX C

December 1, 1970

Dear Graduate:

In the spring of 1969, 269 Wheaton College seniors completed the Rokeach Dogmatism Scale Form E, and a selected sample of 121 seniors were asked to take the Wheaton College Senior Questionnaire. You have been selected to provide a controlled, representative retest of these instruments.

Please fill out the instrument/instruments you find enclosed in this letter. The majority of the sample will have both the Dogmatism Scale and the Senior Questionnaire to complete. I am interested in the analysis of group data and not the individual responses to each test. Consequently, each instrument will be coded by number to protect the anonymity of the respondent. The numerical code will be used to determine which individuals in the sample have not returned their tests.

This research will be used to complete my Ph.D. dissertation in Student Personnel Work in Higher Education at Loyola University. The purpose of the dissertation is to study the longitudinal impact of a small, value-oriented liberal arts college on the dogmatism, values, and behavior of its students. The major focus will be on the change which takes place the first two years following the college experience.

The significant results will be shared with Wheaton College in order to improve the conditions which will allow for maximum growth potential of each future student.

Thank you for your generous help in completing this task. It is important that these tests be returned by January 1, 1971.

Sincerely,

William E. Lindberg
Associate Dean of Students

APPENDIX D

January 4, 1971

Dear

This letter is in regards to my recent mailing I sent you concerning my research on dogmatism and value change for Wheaton College graduates of 1969.

It has been most encouraging to receive a 68 per cent return within one month from the first mailing. I need 20 additional responses to meet the minimum number of returns required by my dissertation committee.

I would appreciate your specific assistance in completing this project. According to my records, I have not received a response from you. If by chance you did not receive the 1969 Senior Questionnaire--alumni form and in most cases the Dogmatism Scale, please call me collect at 312-653-4314.

Thank you again for your cooperation and help.

Sincerely,

William E. Lindberg
Associate Dean of Students

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APPROVAL SHEET

The dissertation submitted by William E. Lindberg has been read and approved by members of the Department of Guidance and Counseling.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

May 20, 1971
Date

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Signature of Advisor